

**2 Multimedia CD-ROM Family Edutainment PC & Mac Games**

# Electronic Entertainment

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**Multimedia  
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COVER PHOTOGRAPH BY STAN MUSILEK; INSET ART BY STEVEN POLLOCK

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Prepare for Kavok's revenge in *Star Trek The Next Generation: A Klingon Challenge* on page 104.



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# Electronic Entertainment

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## Tech Shop

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by Garry Ray

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Get full Internet access, better sound, and some sympathy when your newest game won't run.



Anyone can have fun role playing on the Internet. We tell you how on page 52.





## Editor's Page

Gina Smith

# Upgrade Fever


Sooner or later, it's bound to happen. That fancy computer setup you were so happy with just a while ago is going to seem boring. Really boring. Unless you've got serious CD-ROM power and killer sound, running today's newest, most realistic multimedia titles and games is out of your reach.

But you don't have to buy a whole new system to get up to speed. As E2 contributor Garry Ray shows you in "Do-It-Yourself Multimedia," turning the PC you already own into a state-of-the-art multimedia machine is easier—and cheaper—than you think. For less than \$500, you can get a double-speed CD-ROM drive, a stereo sound card, speakers, and a bunch of software, all in a single package. We check out the best buys and the easiest kits to set up on page 108.

And have you been following the action in the CD-based gaming decks? Practically every consumer electronics maker is trying to get you to put its box on top of your TV. First it was Philips CD-i, then Sega CD and Pioneer's LaserActive, and now 3DO and Commodore's CD<sup>32</sup>. Even Apple and IBM are working on CD-based boxes. "This is war," says contributing editor Gregg Keizer, and it's bound to get nasty. Check out the battle on page 48 as he helps you separate the facts from the hype. Read it before you even think about buying a system.

Speaking of nasty battles, you won't believe what scary misdeeds are going on in the Multi-User Dungeon games on the Internet. Definitely not for the faint of heart, MUDs mean serious online action. And because veteran players regularly ridicule beginners, you'd do well to preview the action in our exclusive excerpt from Andy Eddy's new book, *Internet After Hours: Fun, Games, and Just Plain Weirdness on the Internet* from Prima Publishing, and see whether you'll ever feel up to playing in a MUD (page 56).

Also in this issue, the Multimaniac discovers morphing (page 72), Barry Brenesal reveals the secrets of the world's oldest game (page 66), and columnist Nolan Bushnell discovers some truly shocking game controllers (page 120).

And as always, E2 is the place to find out about multimedia rock 'n' roll. Don't miss features editor Fredric Paul's exclusive look at hot new titles like Interactive  $\Phi$  and The Band Yes in Sharp Edge on page 10. Finally, check out reviews of 18 of the latest PC, Mac, and 3DO games in our revamped State of the Game section, beginning on page 79. 

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## Haley's Comment

In "Take Control of Rock 'n' Roll," (March, page 46) Charles Bermant suggests that Chuck Berry, Fats Domino, and Elvis Presley were responsible for rock 'n' roll. Actually, they were second-generation rockers. I recognize that rock spun off of the blues, but rock 'n' roll (a term coined by DJ Alan Freed) as we know it was created when Bill Haley & The Comets recorded "Crazy, Man, Crazy" in 1953 and "Rock Around the Clock" in 1954. He and several others were rocking some three years before the artists Bermant cites. Haley never got the recognition he deserved and died a bitter man.

Joe Stephan  
Via CompuServe

*You're right. Haley's snappy numbers stand as pop classics, helped create rock 'n' roll, and predated Berry, Domino, and Presley. But it wasn't until these later artists that rock 'n' roll became a cultural mainstay. And, if you want to get technical about who got insufficient credit, you should investigate the jump-blues shouters that inspired Haley—people like Big Joe Turner, Wynonie Harris, and Louis Jordan. Haley's "Shake, Rattle and Roll," after all, is just a sanitized version of Turner's ribald classic of the same name. If there were any justice in the world, they'd all be doing Taco Bell commercials today.*

—Ed

## Do Your Homework!

I would like to say that I found the April issue of your magazine entertaining, informative, and altogether satisfying, but I can't. Yes, it was entertaining. However, technical editor Christopher Lindquist apparently didn't do enough work.

In "Multimedia for the Masses" (page 106), I find it difficult to believe that he considered more than the ten systems he wrote about. For example, I doubt that a Gateway 2000 or Compaq machine was even evaluated. I am familiar with the Gateway 2000 systems because one of my roommates sells them. I am personally the biggest critic of the company and their machines that I know of, and now

I'm defending them.

Gateway has a system with specs like the Insight VL 486DX2-66M that's cheaper than an Eltech Splendor II. Gateway also has a 486DX2/66 machine with the new PCI bus that meets MPC-2 guidelines for just under the \$2,500 price tag.

In the future, if you review computer systems, start with some of the bigger makers, and consider more than just those companies that happen to be in your backyard.

Douglas R. Kramer  
Sioux City, Iowa

*More than two dozen computer companies, both large and small, were invited to submit systems for our roundup. Some were unable to supply PCs before our deadline, while others simply did not make it into our top ten.*

*You can be sure that we are not ignoring anyone. Look for reviews of Compaq and Gateway machines in future issues.*

—Ed

## CD-i Not Dead Yet

Your recent article on Philips's CD-i system ("CD-i: Dead or Alive?" April, page 61) proved your commitment to covering platforms in the interactive age. I rarely find publications that devote any attention to the CD-i. Moreover, I applaud the concise reporting by Gina Smith and Alex Uttermann regarding the CD-i's current discs as well as its prospects.

Critics who have already pitched Philips's set-top box at garage sales should reconsider Philips's recent actions in support of its interactive device. Let us not forget who invented CD technology and laser optical discs.

Joseph Sardo  
Miami, Florida

*For more on the future of CD-i, see "It's War!" page 48.*

—Ed

## Where'd the Money Go?

I enjoyed the first volume of your magazine so much that I immediately subscribed. I

am very satisfied with your coverage of interactive technology.

Unfortunately, many magazines can be frustrating because they lead people to believe that the use of CD-ROMs, which are cheaper than floppies, should make the overall cost of software programs drop. Even my computer-smart friends believe that CD-ROM software should be getting cheaper and wonder why it isn't happening.

But people fail to understand the rising costs of production. Everyone expects programs on CD-ROM to be bigger and better than floppy-based games. Meeting these expectations costs money. For example, a game on CD-ROM needs to have either full-motion video or animation to be a big success. And that takes a lot of time and effort, which sucks up whatever money is saved on materials. Please clear up this issue for your readers.

Bryan McNamara  
Stronsville, Ohio

*Your point is well taken. The transition to cheaper optical media is happening simultaneously with a move to video-drenched multimedia titles that can cost \$1 million or more to produce. Maybe someday the volume of multimedia titles will be high enough to force prices down, but not yet.*

—Ed

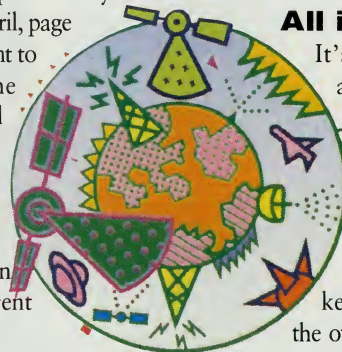
## All in the Family

It's nice that you have addressed all types of electronic games. I am a computer person myself, and my gaming needs have been quite simple (Sierra's Hoyle II and a shareware version of mahjong kept me happy). My son, on the other hand, is a game nut. He enjoys the Ultima series on the computer, but he also has a Sega Genesis with a (Sega CD) and a Game Gear. I'm sure he'll enjoy the magazine to the max!

I'm also sure my gaming interest will be growing. We've just added a CD-ROM drive to the PC. I've told many friends about this new CD-ROM phenomenon. After either buying their own or conning me to let them use mine, everyone agrees: It's a real "thumbs up," as Siskel and Ebert would say.

Keep up the good work!!

Raymond R. Phoenix  
Via CompuServe





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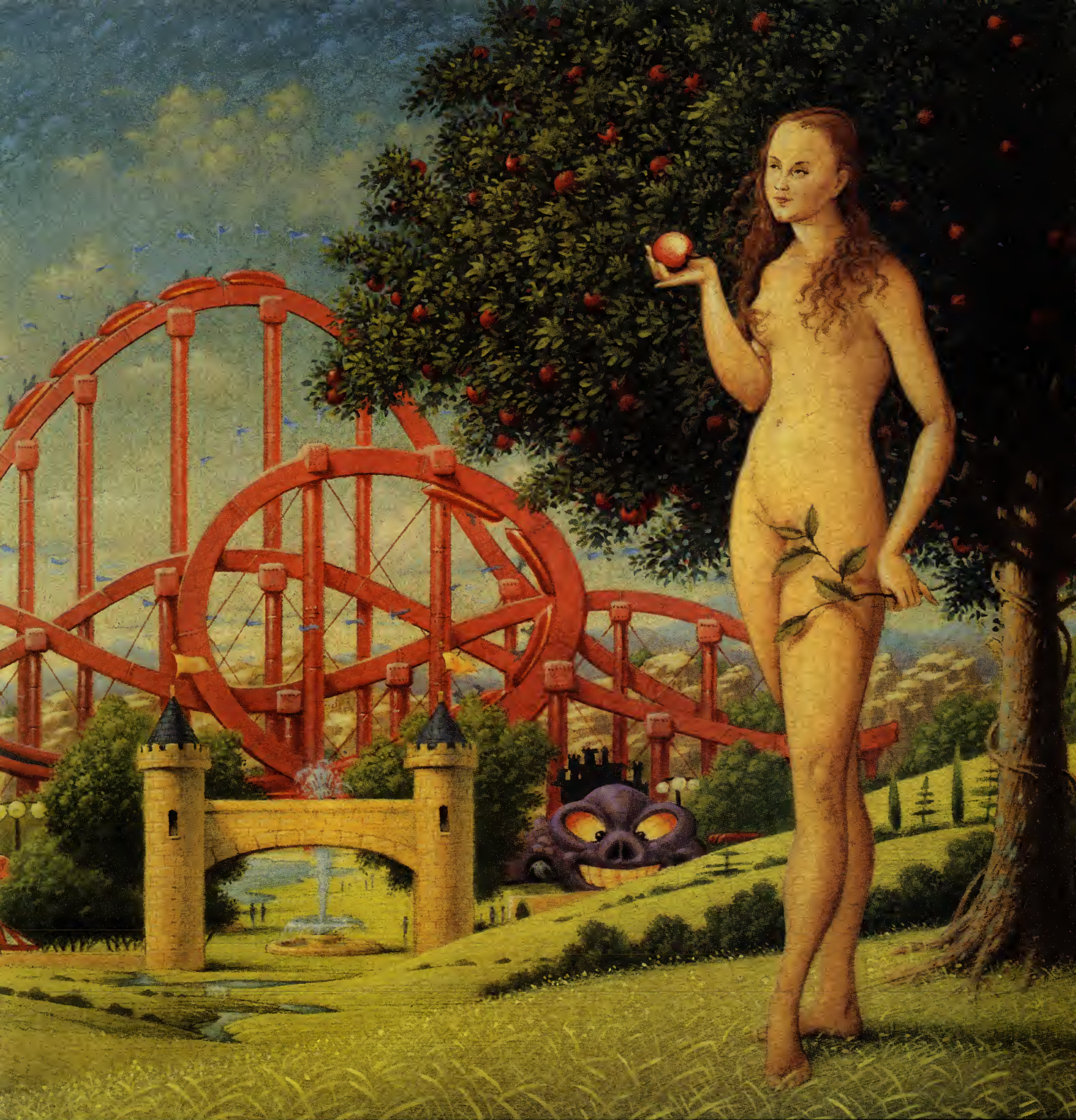


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# SHARP EDGE



## Interactive Rock Keeps Rolling

♂ Interactive

**T**he multimedia rock revolution is spinning faster than ever. People are still talking about splashy interactive discs from Peter Gabriel, David Bowie, and Todd Rundgren, but new slices of interactive rock are already on the way.

So look for fresh new work from British art rock stalwarts Yes, as well as a multimedia journey from the fella formerly known as Prince (but who now goes by the unpronounceable ♂ moniker). Also on the agenda: a musical homage to the psychedelic 1960s, a grab bag of Grammy Award highlights, and even a rock 'n' roll re-working of the old Name That Tune concept.

When Prince changed his name to ♂ last year, he also indicated a new focus on multimedia and interactivity. ♂ Interactive is the first result.

The slick and innovative disc is an immersive journey into the



♂ Interactive offers more than 1,000 views of The Purple One's music, videos, movies, awards, and interviews.

world of His Royal Purple-ness, and it includes five complete songs, four full-length music videos, and snippets of numerous other performances. Walk down one hallway, for example, and click on the gold and platinum records lining the walls to hear clips of their scratchy funk. You may also want to cavort some with the wiggling dancers in his band or mix your own music and videos.

♂ Interactive even sneaks in a new song and video

called "Endorphin Machine" that you'll get to hear only by solving the mystery of the disc. The title is scheduled for release on June 7, the star's birthday. (Graphix Zone; 714-833-3838 ext. 117; CD for Windows/Mac, \$59.95)

### Yes, We Have Multimedia

**The Band Yes** is a standard audio two-track CD single that doubles as a CD-ROM replete with interviews, outtakes, rehearsals, and band-member profiles.

The CD-ROM material lets you compare fin-

ished cuts against the original demos, page through a jukebox of the disc's contents, and

explore an interview matrix, where each band member gives his own take on seven questions. Look for an early-July ship date. (Crunch Media; 310-458-8866; CD for Windows/ Mac, \$6.49)







## Name That Game

**What's That Song** is a computerized rock and roll version of *Name That Tune* that's draped in 3,000 multiple-choice rock trivia questions to earn the right to play *What's That Song*, in which you try to identify one of 300 classic rock songs or 50 video clips.

The digitized host of *What's That Song* knows 450 different names.

Legal licensing battles prevented the developers from using original songs, so you'll have to settle for reasonable cover versions. *What's That Song* is due in August from Interactive Records. (Sanctuary Woods; 800-872-3518; CD for Mac, not yet priced) Correctly answer one of

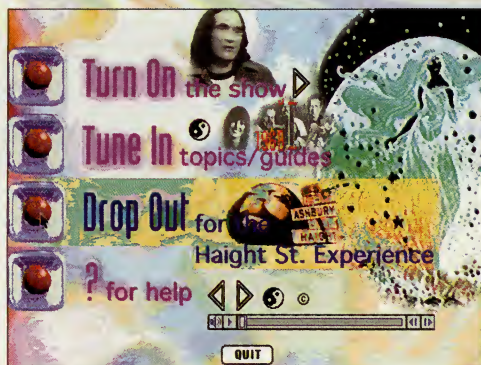
## If Sixties Was Nineties

More a social history with music than a pure interactive rock disc, **Haight Ashbury in the '60s** chronicles the extraordinary period when a shabby San Francisco neighborhood captured the imagination of the world. Terrific tunes from The Grateful Dead, Jefferson Airplane, Janis Joplin, and others provide the project's groovy soundtrack.

The disc's reference cornerstone is *The San Francisco Oracle*, the Haight-Ashbury news-

paper that bloomed from September 1966 to February 1968 during the neighborhood's psychedelic heyday. Narration by *Oracle* editor Allen Cohen and a variety of still and video images add to the experience. Just remember to avoid the brown acid. Release date, format, and distributor have not yet been set. (Bove/Rhodes; 707-884-4413; not yet priced)

—Fredric Paul



More than just music, *Haight Ashbury in the '60s* is a social history.

## And Don't Skimp on the Virtual Pickles

Looking for that overlooked, unappreciated artist? Check out the Internet.

Los Angeles' Kaleidoscope Media has launched what it calls a "digital art deli" on the Internet. Within minutes after artists, writers, and film makers post their works, they're available for sampling by more than 20 million networked Internet subscribers from Poughkeepsie to Pakistan.

Jeannie Novak, a partner in the venture, says the company has created an online electronic terrain called Kaleidospace where artists can display short

excerpts highlighting their talents. For example, musicians might showcase 30-second cuts from their songs, and film makers can provide short scenes or trailers from their work. Users can also order the work of artists that intrigue them.

The electronic deli works with the Mosaic interface to the World Wide Web for users of Windows, Macintosh, and Unix computers. And it's guaranteed not to give you gas.

—James Daly



The digital deli serves up a vast array of electronic treats.



Eric Clapton is only one of the 40 performers in Grammy's Interactive.

## Grammy's Got A Brand New Bag

The new **Grammy's Interactive** disc will usher you into an animated virtual theater where you can watch 40 performance clips and interviews with top stars like Eric Clapton. You can play an audio trivia game or even produce and save your own Grammy's show. (Media Vision; 510-770-8600; CD for Windows/Mac, approximately \$60)



## NEWSFLASH

**Aero the Acro-Bat**, **Belle's Quest**, and **Pirates of Dark Water** from **Sunsoft Interactive Entertainment** will be 3 of the 50 titles available on the **Sega Channel** this summer during the interactive TV channel's national rollout. The channel will provide Sega Genesis games on demand 24 hours a day, along with game previews, game tips, news, contests, and promotions.

■ **Prodigy** and the **ESPN** sports channel have inked an agreement for the cable TV network to offer statistics, photos, and commentary on the Prodigy electronic network. The sports portion of Prodigy has been renamed **ESPNET**, and officials from both companies say they hope to offer sound and video products as well as a library of scores and stories.

■ **Time Warner's** prestigious **Book-of-the-Month Club** has accepted its first CD-ROM title: **Poetry in Motion** from **The Voyager Company**. Poetry in Motion, based on the Ron Mann film, features 24 poets performing their work and speaking about what inspires them. This month, the **History Book Club**, another Time Warner unit, will make available a second Voyager CD, **Who Built America?**

■ From over the waves, we've received word that British CD-ROMs are turning up infected with computer viruses. **The British Virus Bulletin** claims that copies of **Software Vault Collection 2**, published by American Databank, are infected with the **PS-MPC.Math-test** virus and that **Night Owl #10** has popped up with the **Lapse** virus. There's only one problem: CDs are read only and can't be cleared. You have to destroy the entire CD and get a new one.

continued on page 14

## Encounter Daedalus with Tia Carrera

What do you get when you combine heart-throb actress Tia Carrera of *Wayne's World* and *Rising Sun* fame with Mechadeus, the developer of *Critical Path*?

Call it **The Daedalus Encounter**. The upcoming game is a 22nd-century science-fiction adventure starring Tia as the game's hero-

ine, Ari, and Christian Boucher as Zach, her cohort. As Casey, a mechanical probe with a human brain, you accompany the actors through the story. Together, you explore



Fight your way through the dangers of the 22nd century with Tia Carrera as your comrade-in-arms.

a mazelike alien ship that is doomed to be destroyed as it passes through

the corona of a nearby star. Your only way out is to alter the ship's course.

Mechadeus plans to use the high-resolution 3-D graphics it developed for *Critical Path*, so be ready to don your asbestos underwear if you can't avoid the menacing star. The *Daedalus Encounter* is due out by year's end. (Media Vision; 800-845-5870; CD for DOS/Mac; not yet priced)

—Catherine Peddie

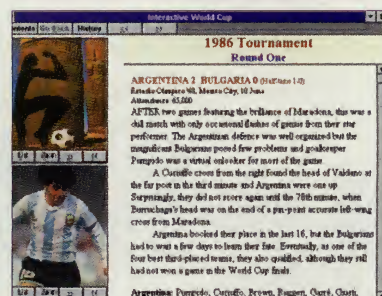
## World Cup CD Not Just for Kicks

Soccer fanatics from around the globe will invade the U.S. this June and July as the States hosts the 1994 World Cup. To keep up with World Cup mania, check out **Interactive World Cup Soccer** from Softbit, a history and media guide to this year's event.

The disc includes history and analysis of every champi-

onship game from the Uruguay final in 1930 to the 1990 confrontation between Germany and Argentina. Fifty minutes of video, sound clips, and color photos

enhance the history lessons and team and player profiles. A media guide includes rosters and player statistics from every nation.



Let your PC help you keep up with World Cup madness.

True to the event's international focus, you can view the title in English, Spanish, Italian, German, and French. (Softbit; 714-251-8600; CD for Windows; \$49.95)

—Bill Meyer



# Cool Screen Saver, Man

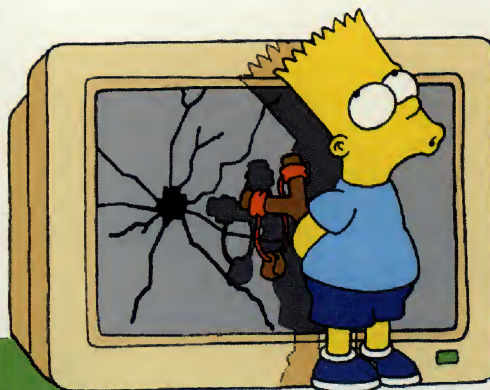
Now you don't have to wait until Thursday night to get your fix of **The Simpsons**. Coming this September from Berkeley Systems, the flying-toaster people, this Mac and Windows screen saver features the entire cast of characters from the Fox animated TV show.



Based on Berkeley's After Dark screen-saver engine, The Simpsons features



Berkeley worked with Fox to create a screen saver that's true to the Simpsons' TV show.

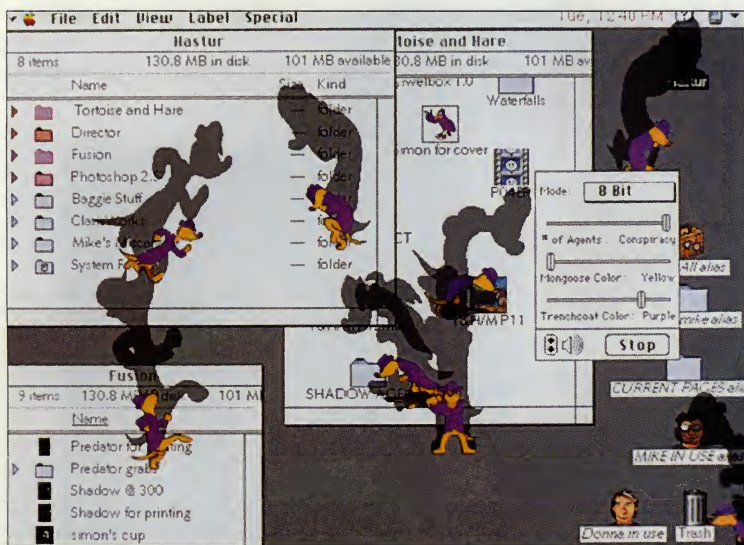


MATT GROENING

more than 15 modules—including Bart spraying graffiti on your screen, Homer chomping his way across the display, and Itchy and Scratchy playing a gory game of cat and mouse through a field of desktop icons. You can even select the

drawing module, which includes step-by-step drawing lessons and tips on how to create the likes of Bart and the gang.

The Simpsons includes plenty of sound effects and recordings by the shows'



A design as cool as this could be enough to earn you the coveted flying toaster.

voice actors, and it bears the stamp of approval of Simpsons creator Matt Groening. (Berkeley Systems; 510-540-5535; Windows/Mac, \$49.99)

Not a Simpsons fan? Then tell Berkeley what your idea of the next great screen saver is in the **1994 After Dark Display Contest**. You might even win the grand prize of \$10,000 or have your work appear in a future version of After Dark.

This third annual event is a chance for programmers, artists, and kids to strut their stuff in three separate categories. Berkeley will select a grand-prize winner and award prizes in each category, including a Macintosh Performa with CD-ROM for the winning kids' entry. All winners will receive the highest award of distinction: the flying-toaster trophy.

Deadline for entries is October 15th. For an entry form and more details call 510-540-5535, ext. 600.

—Christine Grech

## Ad Nauseam

For most television addicts, the fast-forward button on a VCR was put there by a divine god so we could zip through those annoying commercial breaks in recorded TV programs. But if your arm's tired from reaching for the remote, you might consider the **Commercial Brake**, a "black box" designed to automatically eliminate commercials from videotaped programs.

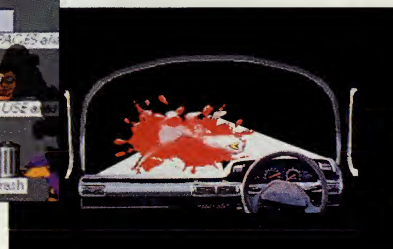
The \$199 box searches for the black videotape frames and breaks in sound that tend to separate ads from programs. It plays through the entire tape to create a playback map of the program. After you rewind the tape, the map tells Commercial Brake when an ad break is about to start. The device then fades the screen to blue and automatically fast-forwards through the offending ads. Or so the company claims.

So far Madison Avenue has kept mum about the Commercial Brake. But inventor Jerry Iggulden fears he may be a marked man:

"These days I'm always a little wary as I leave my house." (Arista Technologies; 800-274-7828; \$199) —James Daly



Like last year's winner, **Blood Alcohol**, your screen masterpiece might end up in a future version of After Dark.





## NEWSFLASH

■ If you're feeling a little combative, you may want to check out **Domark Software's FST World War II**, the first in an upcoming series of add-ons for the company's **Flight Sim Toolkit**. The \$25 update features scenarios from the critical battle of Midway in the Pacific as well as the D-Day invasion of Europe. **FST World War II** also includes detailed cockpits of the planes that participated in these battles, such as the Wildcat, Corsair, Avenger, and Japanese Zero. (Domark Software; 800-695-4263, \$24.95)

■ If your green thumb just isn't what it used to be, check out **The Exotic Garden**, a multimedia reference guide to growing plants from **VT Productions**. The disc features tips on hundreds of ferns, cacti, herbs, edibles, orchids, and palms as well as more than 500 color photographs and narrated time-lapse cinematography. (VT Productions; 408-464-1552; CD for Windows, \$49.95)

■ **Interplay Productions** has licensed **GURPS**, the **Generic Universal Role-Playing System** developed by **Steve Jackson Games** of Austin, Texas. Civil libertarians may remember the infamous role **GURPS** played in the education of government officials regarding rights on the electronic frontier. In March, 1989, the U.S. Secret Service raided Jackson's business and confiscated a copy of **GURPS** because they considered it a "handbook of computer crime." Fact is, **GURPS** is no more dangerous than a Cabbage Patch doll. Jackson was not charged with any crime, but the government held his computers for months and returned several pieces severely damaged.

continued on page 16

## The Swing's the Thing

Think today's computer baseball games are hot? Well, you ain't seen nothing yet. The boys of summer are about to take on a whole new look, and computer baseball and other sports games will never be the same.

At the San Francisco Giants' spring training camp in Scottsdale, Arizona, there was some pretty wild action going on behind the scenes. In a darkened basement just behind center field, a tiny California company was busy using a proprietary technique called **BioVision** to replicate the swings of more than 15 players, including first baseman Todd Benzinger, outfielder Darren Lewis, catcher Kirt Manwaring, and third baseman Matt Williams.

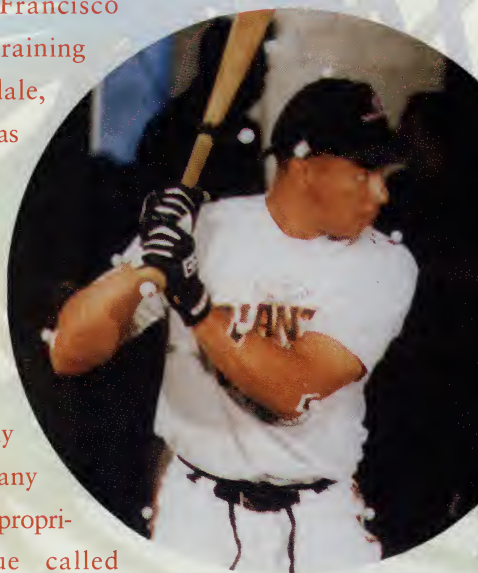
The company, Optimum Human Performance Center (OHPC) in Menlo Park, California, first attached reflective markers to the players' joints. Six cameras then videotaped their batting stances and swings at a

superfast 200 frames per second (movies are projected at 24 frames per second). The result is analyzed by high-performance graphics computers from Sun Microsystems and Silicon Graphics.

For the Giants, BioVision creates three-dimensional

The captured motion could also be useful for computer baseball games. OHPC has already worked with Accolade on the Juggernauts game, for example. And Accolade is using BioVision to capture the realistic movements of Shaolin and Akido practitioners for an upcoming martial arts Sega video game.

OHPC won't name the company that's interested in the



The illuminated swings of major leaguers could soon appear in CD-ROM sports games.

models that coaches and players can study to correct defects in their batting mechanics. They can view stances and swings at any speed and from any angle—including under the feet, above the head, and from the eye-level perspective of the player. They can even remove the player's head and track just his eyes. The technology has long been used to analyze golf swings.

baseball motion capture, but sports giant Electronic Arts hosted the entire Giants team for a day of fun and games just before the season started. (Optimum Human Performance Center; 800-866-3463)

—Gina Smith



# Easy Cruising on the Internet



**MKS Internet Anywhere**, from Mortice Kern Systems, also provides screens filled with clear and intuitive displays that make for a warm

The Internet is hyped as tomorrow's data superhighway today. The electronic web. The great equalizer. Everybody's chat line.

It's also about as intuitive as trigonometry. For most people, the prospect of carving through the Internet's

that Macintosh and Windows users have learned to love, or at least tolerate.

If you're a member of **America Online** (AOL), you already have an Internet gateway—sort of. Use the keyword *Gopher* to access AOL's e-mail gateway or connect to the Usenet

and-click interface.

Internet services are listed on menus with such self-descriptive titles as News or Arts and Leisure. Submenus offer even more choices. (The Pipeline; 212-267-3636; Windows/Mac, \$15 for 5 hours per month, \$20 for 20 hours per month, or \$35 for unlimited access)

**Internet-in-a-Box**, a joint offering from Spry and O'Reilly & Associates, offers a similarly easy-to-use Internet front end. It also throws in the Global Network Navigator, which organizes and catalogs online resources—as well as the Whole Internet User's Guide and Catalog, a wonderful introduction to the culture and resources on the Internet. A Mac version is in the works. (Spry; 800-777-9638; Windows, \$149)

plays that make for a warm and comfortable Internet ride. (Mortice Kern Systems; 800-265-2797; Windows, \$149)

E-mail fans may also want to check out the **WinNet Mail** and **WinNet Internet Access Service** from Computer Witchcraft. WinNet Mail is both a software product and a service, similar to America Online. The software offers a graphical toolbar, folders for organizing mail and news, an address book, and message-search functions for finding new or old mail. (Computer Witchcraft; 502-589-6800; Windows; WinNet Mail, free; WinNet Internet Access Service, \$8/hour, \$9.94/month minimum)

Patient Windows users may also want to wait until later this year when Microsoft releases a new version of Windows that will



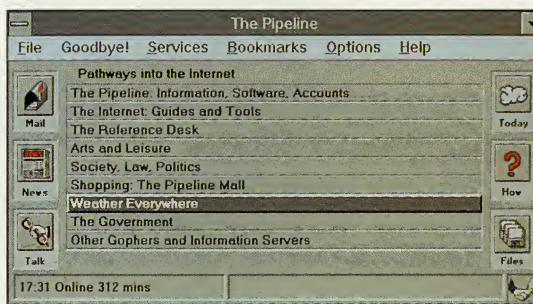
**Internet-in-a-Box simplifies murky Unix commands.**

murky Unix commands and frequent error messages ranks right above a blow to the head on the personal enjoyment scale.

That's changing. Several new products are beginning to demystify navigating the thousands of networks that make up the Internet by hiding its arcane Unix commands behind the same sort of graphical user interface

Online; 800-827-6364; Windows/DOS/ Mac, free with AOL membership)

If you want more access and want it now, the **Pipeline** provides the full range of the Internet's services—e-mail, discussion groups, and file searching and retrieving—through an integrated point-



**The Pipeline offers an easy-to-use graphical user interface.**

include the ability to connect to the Internet, according to Microsoft chairman Bill Gates.

—James Daly



## NEWSFLASH

■ Take a cross-country road race with **Media Vision's Road Scholar**. This family program contains over 1,100 trivia questions, asked in various regional dialects, which you answer to earn points as you make your way through the U.S. (Media Vision; 800-845-5870; CD for DOS, \$59.95)

## In CES News....

■ Things are rockin' in the Windy City of Chicago—and we don't mean only at the North Side blues clubs. The Consumer Electronics Show blows into town this summer. Among the introductions at the show, **Accolade** is bringing out **Video Sports Football**, which features 600 film clips of actual plays and 51 of the NFL's hottest players. **Compton's New Media** is demonstrating its newest Compton's Interactive Encyclopedia as well as **The Berenstain Bears Learn About Numbers**, a preschool title that teaches number and shape recognition, addition and subtraction, and even volume, weight, and graphs. **The Discovery Channel** will use CES to kick off its line of titles for the preschool market. **Professor Iris**, developed with **T/Maker**, will inaugurate the new line. Discovery is also prepping two other discs, one about sharks, the other concerning aviation. **Humongous Entertainment** will introduce **Freddi Fish** and **the Case of the Missing Kelp Seeds**. **Freddi Fish** swims through this story with a scrappiness rarely seen in the female denizens of childrens' titles. **Interactive Publishing Corporation** brings **Infopedia** to the encyclopedia wars, adds a Tchaikovsky follow-up to its Beethoven CD-ROM, and introduces **Transportation Challenge**. **Maxis** announces its first two CD-ROMs at the show, **SimRainforest** and **SimTown**, both for ages 8 to 12. In the latter, you shape the destiny of a neighborhood.

## Star Talk with Laurie Anderson

**L**aurie Anderson has made a career of bringing the mysteries of multimedia performance art out of the loft and into the mainstream. The range of her talents—singer and storyteller, video- and filmmaker, sly cultural commentator, experimenter in all things high-tech—mark her as a modern renaissance artist. Associate Features Editor James Daly chatted with her after a multifaceted performance that included readings from her new book, *Stories from the Nerve Bible*, and songs from *Bright Red*, an album due this August.

**E2: You seem like a natural to create an interactive CD title. Any plans?**

**Laurie Anderson:** I'd love to, and I'm beginning to make some plans. *Voyager* is doing a lot of great things right now, and they'd like me to work on a project with them.

**E2: What would it look like?**

**LA:** I have lots of ideas. It might have something to do with a horror movie because I'm such a big fan of horror movies.

I'm trying to get into this area in other ways as well. *Stories from the Nerve Bible* was really my attempt to create a sort of

talking book. All of the pieces were originally spoken works, and I think you can hear that. It focuses on how language is spoken as opposed to how it's written. Plus I want the piece I do to be very visual. One of my favorite writers is James Joyce because it seems like he's making movies rather than writing books. A lot of his images are very cinematic.

**E2: What's going on with Real World, the avant-garde amusement park that you, Brian Eno, and Peter Gabriel are creating?**

**LA:** Lots. We recently got a deed to some land in Barcelona, Spain, so it looks like it's going to happen. About ten years ago, Peter Gabriel decided he wanted to make an underground theme park where everyone would put what looked like big hair dryers on their heads and see holographic images and hear all kinds of sounds. He asked Brian and myself to help him plan it.

When you enter the park you'll see two 60-foot tornadoes. We're talking with a weather artist named Ned Kahn from the Exploratorium in San Francisco about helping us with that.

Inside there'll be theaters and art installations and a radio station. Peter is also planning a water ride called *River of*

Life that goes through the stages of life. [Filmmaker] John Waters is helping him with that, and you can repeat certain stages of your life that you liked. I also want to have a ferris wheel that is half in and half out of the water. It came to me in a dream.

**E2: Sounds like a lot more fun than standing in line for an hour for the flume ride.**

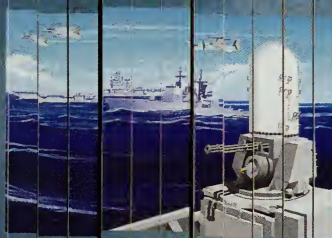
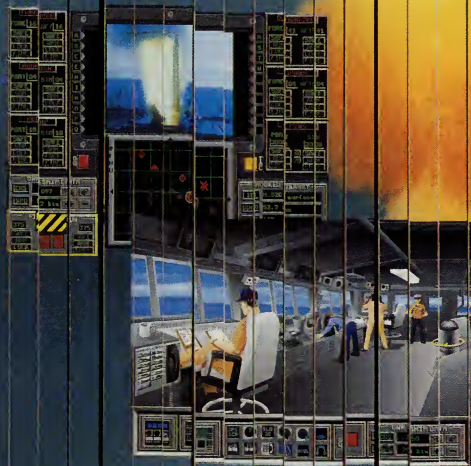
**LA:** Well, that's it. It's participatory. So much of art is socked away in museums and treated more or less like money. It's traded and exhibited and distant. *Real World* is not going to be about standing in line for an hour and being entertained for a minute. It's about participating in audio and video experiences and changing them.



PHOTO BY JEFFREY MAYER



# WE REGRET THE APPEARANCE OF THIS AD, BUT THE MILITARY INFORMATION IN THIS NEW GAME HAS ONLY RECENTLY BEEN DECLASSIFIED.



Otherwise, we'd have to ask you to eat the evidence for security reasons.

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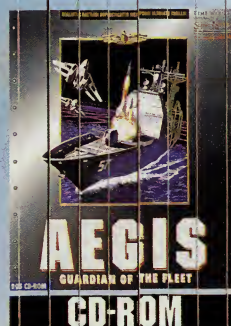
cinematic graphics and CD-quality sound effects

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## Photo Invasion of Vietnam

Look for one of the most ambitious CD-ROM projects yet to hit the shelves this fall. Rick Smolan, the photographer who drew raves for *From Alice to Ocean* and his *Day in the Life* book series, has taken the idea of interactive books to a high-tech extreme.

In March, Smolan and 70 other top photographers from two dozen countries arrived in Vietnam to begin work on what will eventually become an interactive photojournalistic experience. Each photographer was equipped with several cameras, scads of film, a Macintosh LC computer, a car and driver, and a translator. They spent a week shooting 200,000 photographs, some 200 of which will end up in a



coffee-table book called **A Passage to Vietnam.**

The photographic adventure volume will be accompanied by a CD-ROM that includes historic photographs, video clips recorded by a Japanese film crew, and interviews with the photographers describing how they got that special shot. A TV special is also planned. The \$1.5 million project is partly underwritten by Apple Computer, Kodak, Thai Airways International, and other companies eager to do business in Vietnam. (Against All Odds Productions; 415-383-8880; CD for Mac, not yet priced)

—James Daly

PHOTOGRAPH BY EVE HELFMAN

## Play School

You go to college to get an education, not play games. But if you attend **Canada's DigiPen Applied Computer Graphics School**, you'll spend as much time with a joystick as you will with a pen.

The first school devoted to training the next generation of video-game programmers will begin accepting applications this month. The two-year course for high-school graduates will begin in September and focus on the technological and engineering processes involved in creating interactive multimedia programs, says Claude P. Comair, president of DigiPen. Comair adds that while the multimedia industry is experiencing rapid growth—it pulled in a whopping \$6 billion last year—the pool of creative talent building multimedia applications isn't.

First-year students will explore video-game programming; essential mathematics such as algebra, probability, trigonometry, and statistics; and two- and three-dimensional transformation. The structures and designs of computer hardware such as printers, plotters, digitizers, and video converters will also be covered. Courses in the fundamentals of computer graphics round out the year.

During year two, students will use their knowledge of hardware, animation, and advanced modeling techniques to create their own video games for the 16-bit Super Nintendo Entertainment System. Students will also learn about storyboard presentation and final algorithms.

Based in Vancouver, Canada, the school will accept approximately 60 students per session. The tuition is \$8,500 (Canadian) per year. (DigiPen Computer Graphics School; 604-682-0300)

—James Daly

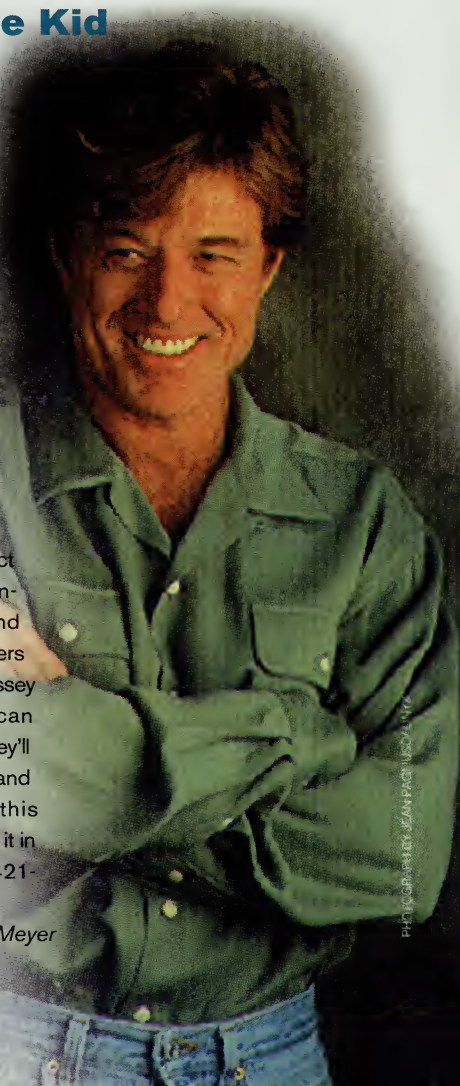


## The Sundance Kid Discovers Multimedia

You can welcome Robert Redford to the growing ranks of actors and directors enticed by the world of multimedia. The Great Blond One has teamed up with Pioneer Electronics and educational software developer New Learning Project to produce an environmentally oriented disc for the Pioneer LaserActive system.

The specifics of the title are still murky, but the project was born of Redford's concerns for environmental and Native American issues. Users will set out on a rugged odyssey through the North American wilderness. Along the way, they'll solve ecological mysteries and learn the teachings of this region's first settlers. Look for it in early 1995. (Pioneer; 800-421-1404; LaserActive, \$129.99)

—Bill Meyer



PHOTOGRAPH BY JEFFREY MANN

ILLUSTRATION BY JAMES YANG



# Ancient Video History

Their critics once claimed they'd turn the nation's teens into a generation of blank-eyed potato heads. Instead, they've become low-brow high culture. Video games, the beasts that gobbled a billion quarters and balanced a million beers, are now a part of history—and the subject of a fascinating retro-



**Video games, the beasts that gobbled a billion quarters and balanced a million beers.**

spective at the Museum of Science and Industry in Tampa, Florida. **Hot Circuits: A Video Arcade** begins in the technologically Neanderthal days of 1971

when Computer Space became the first coin-operated video arcade game. But a generation of pinball addicts accustomed to flippers couldn't master its complex controls, and the game died. So its inventor (now E2 columnist) Nolan Bushnell, took the \$500 he'd made, founded Atari, and invented Pong. The rest, as they say, is history.

All the video game classics are represented in the exhibit, including Pac-Man, Space Invaders, Asteroids, Donkey Kong, Centipede, and Berzerk. The show even includes one of the

most controversial games ever, Death Race, where the player's only goal is to mow down scrambling pedestrians with a race car.

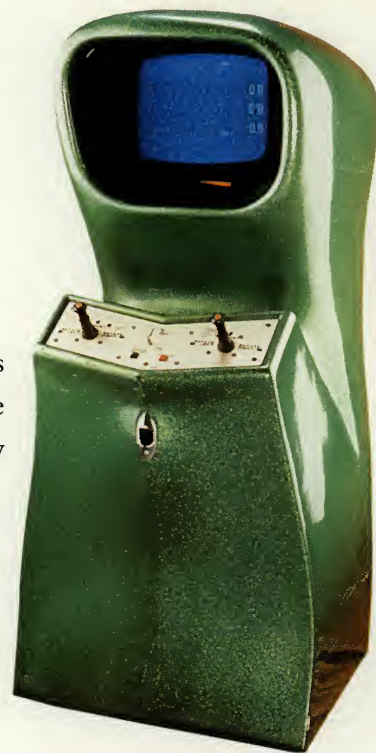
Nearly all the 45 games still work, and each \$6 admission (\$5 for seniors and students, \$3 for children 2-12) comes with a handful of tokens that can be used to relive video memories.

Museum officials wave off criticism from video game detractors, noting that the games span the middle ground between television and home computing. Game creators' cutting-edge work was also important to the development of computer graphics.

The games are remarkable social barometers, too. It's hard not to battle the greasy drug pushers in NARC without recalling President Reagan's fervent "Just Say No" anti-drug campaign of the mid-1980s.

The exhibit's Orlando visit, the final stop of a 10-city U.S. tour that began in 1989 at the American Museum of the Moving Image in New York, runs until October 2.

—James Daly



**Computer Space dates from the technologically Neanderthal days of 1971.**

## Digital Dictation

Millions of \$100 handheld micro-cassette recorders bite the dust every year. Most people just toss the broken units in a drawer. Others brave the torments of customer-service hell and wait a month to have them fixed.

But Norris Communications is poised to change this with **Flashback**, a \$249 portable recorder that's totally digital. Not only does it let you zip or flash to any recording instantly, but at less than three

ounces it fits in the palm of your hand. Flashback uses a digital SoundClip or memory cartridge that holds 40 minutes of material, features a fumble-free two-button control for use in the dark or while driving a car, and has a PCMCIA slot for downloading to a hard disk or a personal digital assistant such as an Apple Newton. And it's even made in America.



**At just three ounces, the all-digital Flashback recorder is a good way to catch thoughts on the fly.**

Flashback's size, durability, ease of use, and digital recording

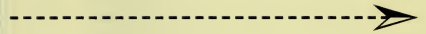
power far exceed the feeble attempts of its competitors. Voice Powered Technology sells a larger Voice Organizer, but this \$200 unit records only four minutes. Voicelt, sold at Sharper Image, captures a measly 45 seconds for \$79.95. (Norris Communications; 619-679-1504;

Flashback, \$249; extra SoundClips, \$69.95)

—Bill Meyer



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# THE 3DO™ SYSTEM

(Not to mention of course, lots of butt-kicking, thumb-blistering, mind-twisting games, that are bound to piss off congressmen



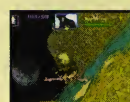
## PLAYS MUSIC, PHOTO

come next election year. Full screen, full motion video, CD sound, and 3D effects give you realism that even your over-stimulated,



## AND VIDEO CD's. BUT

morally corrupt, youthful brain can't imagine. Take Total Eclipse, the hyper-real 3D flying game. You barrel roll at warp speed



## MORE IMPORTANTLY,

though nasty obstacles. And when you screw up, you'll leave the cutest little black stain where your vessel was obliterated. Then there's



## IT WILL PLAY A LOT OF

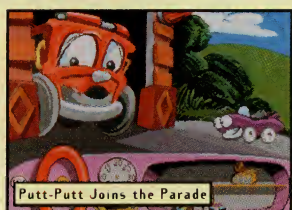


Way of the Warrior, the wicked fast, high resolution martial arts game, where you master over 600 brutal martial arts maneuvers



## EXCITING EDUCATIONAL

while simultaneously ridding yourself of unnecessary teeth. And Jurassic Park™ Interactive, which is just like the movie, except now



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you're the one who must save the Park's guests from prehistoric dino-clones. CD sound and 3D graphics make T-Rex so real, you can



## SUCH AS GEOGRAPHY,

practically smell the lawyer on his breath. These titles are only a few of the many. You get the idea. Even if your parents don't.]



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# LeaderBoard

The best-selling PC, Mac, and CD-ROM entertainment software

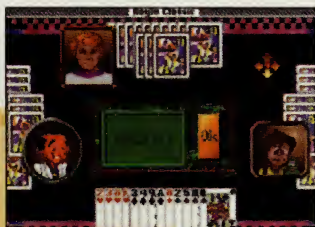
## PC GAMES



The second episode of *Wolfenstein from FormGen* has leaped forward every month it's been on the board. Now it's at number 5.

- 1 SimCity 2000** Build a city of the future with this improved version of the classic. It's been at No. 1 for four months on the Mac; now it's topping the PC list as well. (Maxis; 800-336-2947; DOS/Windows, \$69.95)
- 2 Microsoft Flight Simulator 5.0** Upgraded graphics and added features kept this hugely popular flight sim soaring high. (Microsoft; 800-426-9400; DOS, \$64.95)
- 3 Rebel Assault** Intense 3-D visuals and furious action highlight this *Star Wars* fantasy action adventure. (LucasArts Entertainment; 800-782-7927; CD for DOS, \$79.95)
- 4 The 7th Guest** The ghost of Henry Stauf just won't go away in this realistic and haunting drama. (Virgin Interactive Entertainment; 800-874-4607; CD for DOS, \$99.99)
- 5 Wolfenstein 3-D/Spear of Destiny** Hitler has control over the most powerful weapon in the world. Only you can retrieve it in this blood-soaked 3-D adventure. (FormGen; 800-426-3123; DOS, \$35)
- 6 X-Wing** Jump in and help the rebels in this space-flight simulator enhanced with extensive *Star Wars* video footage. (LucasArts Entertainment; 800-782-7927; DOS, \$69.95)
- 7 Leisure Suit Larry 6: Shape Up or Slip Out!** The sixth in the series lives up to the Laffer reputation. This time, Larry's dream comes true—a vacation at a resort full of women. (Sierra On-Line; 800-757-7707; DOS/Windows, \$69.95; CD for DOS/Windows, \$79.95)
- 8 Aces Over Europe** The scenario is World War II, the missions are many, and the munitions are ready. Put your life on the line to win the war. (Dynamix; 800-757-7701; DOS, \$69.95)
- 9 B-Wing** It's been an up-and-down ride for this X-Wing mission disk that gives you more scenarios in the fight against the Empire. (LucasArts Entertainment; 800-782-7927; DOS, \$29.95)
- 10 Police Quest IV: Open Season** Former L.A. police chief Daryl Gates helped put the realism into this gritty addition to the Police Quest series. (Sierra On-Line; 800-757-7707; DOS, \$69.95)

## MAC GAMES



*Hoyle's Classic Card Games* for the Macintosh, by Sierra On-Line, debuts at number 5.

- 1 SimCity 2000** Build a city of the future with this improved version of the classic. It's No. 1 on our list for the fourth month in a row. (Maxis; 800-336-2947; Mac, \$69.95)
- 2 Myst** Stunning visuals, haunting audio, and logical solutions will keep this game on your play list. It's been high on our list for four months. (Brøderbund Software; 800-521-6263; CD for Mac, \$59.95)
- 3 SimCity Classic** The classic version of the urban simulation in which you set zoning, build mass transit systems, provide police and fire protection, and tax your citizens. (Maxis; 800-336-2947; Mac, \$39.95)
- 4 Leisure Suit Larry 6: Shape Up or Slip Out!** The sixth tale of Larry's lechery makes its second appearance on the Mac list and lives up to the Laffer reputation. (Sierra On-Line; 800-757-7707; Mac, \$79.95)
- 5 Hoyle's Classic Card Games** Animated players challenge you to eight classic card games, including bridge, gin rummy, hearts, and cribbage. (Sierra On-Line; 800-743-7725; Mac, \$49.95)

## CD-ROM TITLES



The computer game version of *The Lawnmower Man* by Sales Curve Interactive cracks the Top Ten for CD-ROMs at number 6.

- 1 Rebel Assault** Intense 3-D visuals and furious action highlight this *Star Wars* fantasy action adventure, which clocks in at No. 1 for the fourth month in a row. (LucasArts Entertainment; 800-782-7927; CD for DOS, \$79.95)
- 2 The 7th Guest** The ghost of Henry Stauf just won't go away in this realistic and haunting drama. (Virgin Interactive Entertainment; 800-874-4607; CD for DOS, \$99.99)
- 3 Microsoft Encarta** Learning takes on a whole new meaning. Now you can experience history with video footage, audio clips, animations, and text. (Microsoft; 800-426-9400; CD for Windows/Mac, \$139)
- 4 Gabriel Knight: Sins of the Fathers** Tim Curry, Leah Remini, and Mark Hamill provide the New Orleans accents in this dark tale about the search for redemption. (Sierra On-Line; 800-757-7707; CD for DOS, \$69.95)
- 5 Myst** Stunning visuals, haunting audio, and logical solutions will keep this game on your play list. (Brøderbund Software; 800-521-6263; CD for Mac, \$59.95)
- 6 The Lawnmower Man** The game version of the popular virtual reality movie makes its first appearance on the LeaderBoard. (Sales Curve Interactive; 310-577-1518; CD for DOS, \$69.95)
- 7 Lands of Lore** Control your destiny and that of King Richard in this exciting fantasy role-playing game filled with action and magic. (Virgin Interactive Entertainment; 800-874-4607; CD for DOS, \$74.99)
- 8 Comanche CD** Jump into the cockpit of a state-of-the-art helicopter and empty the skies of your foes in this 3-D simulation. (Electronic Arts; 800-969-4263; CD for DOS, \$59.95)
- 9 King's Quest VI** Travel through an enchanted world of mystery in this royal adventure and love story. (Sierra On-Line; 800-757-7707; CD for DOS/Windows, \$79.95)
- 10 Star Trek 25th Anniversary** Explore the final frontier at the helm of the U.S.S. Enterprise in this Trekkie spaceship simulator. (Interplay Productions; 800-969-4263; CD for DOS, \$79.95)

The Leader Board is a compilation of top-selling software in 1,300 retail stores for February, 1994. Some titles may appear in more than one category. Source: PC Data.



# PlayRight

## IT'S NOT FOR PLAYERS—IT'S FOR PARENTS

**W**ith thousands of video games on the market, how can parents keep up with their kids' games? They can't. They have to stay ahead of them. *PlayRight* is the first video game publication written expressly for parents. Here's a sample of what's inside.

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From far, far away and long long ago comes a story to savor: a tale of courage, romance, sorcery, evil deeds and malevolent curses; a tale to lift the heart and strike at the senses.

Your kingdom has suffered hard at the hands of the Sorcerer Samuel. But it is 20 years since he and his dread castle were sealed within a magical force by the court wizard of your father; the then king.

Now, the dragon representing the evil mage is stirring and the sphere that holds him is cracking open. The Sorcerer has reawakened! Your quest is clear: fight your way to the castle and defeat Samuel!

## DRAGONSPIHERE

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# spotlight

SOMETHING FOR EVERYONE

## Advantage! Adventure

**S**omehow, most family PCs don't appeal to the whole family.

But AST's new **Advantage! Adventure** line of PCs is the exception; it's perfect for beginners, but it won't disappoint power-hungry experts, either. The \$2,199 50MHz 486DX2/50 machine we checked out was loaded with top-of-the-line multimedia hardware, plus bundles of software targeted at all kinds of home users. No PC we've seen tries so hard to be all things to all people.

The key is the proprietary AST Works! interface and its clever, easy-to-use help system. Built-in video and how-to presentations for novices are nothing new—Packard Bell is continually improving its Navigator system, for example. But AST has found a way to help out beginners without alienating experts. The installation CD-ROM that comes with the

system contains 31 such video explanations to frequently asked questions, as well as text-only answers to another 100 questions. Can't figure out how to exit Windows? Just click on the question, and a video featuring an AST support person pops up in a window and ex-

plains exactly what to do. If you're not interested, just ignore it.

To make the machine even more useful around the house, AST Works! includes a full-blown telephone-answering system, along the lines of the Compaq Presario's. Just plug your phone into the AST's built-in fax/modem telephone system, and you'll have access to up to 99 voice mailboxes. The system lets you use caller ID (where available) to screen calls, and you can send, receive, or forward phone messages and faxes to another number. The AST also comes with a month of free, unlimited services on both Prodigy and America On-Line.

Bundled applications for AST Works! also include Microsoft's Encarta '94 multimedia encyclopedia, Quicken for personal finance, and a collection of custom software programs that let you do everything from creating greeting cards and banners to calculating bank loans and tracking car repairs. You can even view personal photographs through the PhotoCD viewer.

To speed graphics performance, it features a local-bus slot for AST's proprietary Windows accelerator. The system also features a dual-speed CD-ROM drive, a 16-bit stereo sound card, 8MB of memory, a hefty 340MB hard disk, and four empty 16-bit expansion slots. (Whether or not a monitor is also included is up to the retailer that sells you the system.) Like most makers of multimedia systems, though, AST makes the mistake of including a pair of tinny speakers. Hey, nobody's perfect.

Overall, the AST Advantage! is a powerful, well-rounded system with a little something for everyone. You can't please all of the people all the time, but AST's Advantage! comes pretty close. (AST Research; 800-876-4278; \$2,199)

—Gina Smith

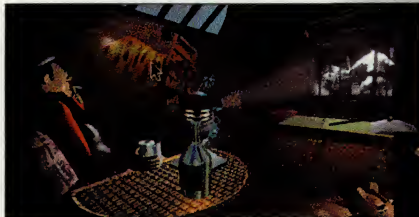
AST's Advantage!  
PCs deliver power,  
ease of use, and  
lots of software  
programs.





## Freaks, Geeks, and Other Oddities

**B**ased on the 1990 album of the same name, **The Residents Freak Show** is your ticket to an interactive carnival where the sideshow freaks are the main attraction.



Pour a drink for Tex the Barker, and he'll pour out the story of his life.

There's music by The Residents (performers who always hide their identities behind masks) and even a few music videos, but what makes this disc special is animator and designer Jim Ludtke's disturbing yet beautiful graphics. At once fantastic and shockingly physical, Ludtke's colorful, detailed animations bring unusual characters to life.

When you enter the Freak Show, you can catch a quick act by each of the seven down-and-out performers or flip through a jukebox featuring famous real-life circus freaks. But if you ignore the Do Not Enter sign and slip behind the curtains to check out the carnies trailers, you quickly learn that there's more to these freaks than what they reveal to the average mark.



Jelly Jack the Boneless Boy lives in a glass box, emerging only to "perform."

Find the secret entrance to Herman the Human Mole's glass and dirt trailer, for example, and learn why he shuns human contact. Pour Tex the Barker enough drinks, and he'll blearily babble the story of his fall from grace as a lion tamer and his shameful love for Wanda the Worm Woman.

Artistically, the stories don't add up to great literature, and the music is challenging, to say the least. Technically, the illustrations are often small and dark, and you'll frequently have to wait for the program to update, even on a fast Quadra.

But the overall quality of the animations and the seamless connections between music, art, and narrative make this disc a good example of the potential of multimedia. In its own way, it's more interesting than such accessible interactive music efforts as Xplora 1, Peter Gabriel's Secret World or Jump: The David Bowie Interactive CD-ROM. (Voyager; 800-446-2001; CD for Mac, \$69.95)

—Fredric Paul

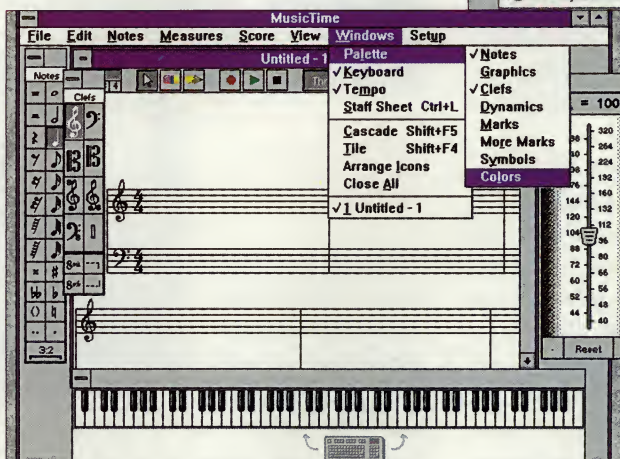
## A Passport to Great Music

**W**riting sheet music used to be almost as much of an art as creating the tunes themselves. But MIDI changed that by letting the computer do the work of putting down on paper all those notes, rests, and chords. Now Passport Designs is bringing that same MIDI power to hobbyists and amateur composers with its **MusicTime** software.

The \$150 package lets you record and compose music simply and quickly using a Macintosh or Windows PC with a sound card. The notes you play appear instantly on an onscreen staff. You can then modify the notes individually, re-record sections, add lyrics, or print out the composition. The program supports up to eight "staves," so you can write parts for each member of a small ensemble or choir. Guitar players will appreciate MusicTime's ability to print out guitar chords.

But you don't have to be a musician to enjoy MusicTime. While the software

supports input from standard MIDI instruments like electric keyboards and MIDI guitars, you can also enter notes via the mouse or keyboard. (It's not as much fun, but you already have the equipment). MusicTime assumes you



**MusicTime's easy-to-use interface turns your PC keyboard into a music studio.**

your first musical composition.

Once you take a look at the sheet-music version of your first composition, MusicTime is sure to draw you back to create even

more tunes. (Passport Designs; 415-726-0280; Windows/Mac, \$149)

—Christopher Lindquist



# Spotlight

## NEW JOYSTICK OPTIONS

### Take Control

A joystick should give you absolute command of your games, and the new 'sticks from STD and CH Products do just that.

STD's **PC Optix** is a tech-head's delight. The \$60 controller uses an optical sensor instead of mechanical resistors to determine the joystick's position. That means there are fewer mechanical parts to wear out, so the PC Optix should last longer than a standard joystick. The PC Optix also includes Mega Zoom software that lets you adjust its sensitivity to compensate for the differences between games. STD tops off the PC Optix with easy-access auto-fire and throttle controls. (STD; 410-785-5661; PC, \$59.95)

If your wallet's a little on the thin side but you still want a high-quality joystick for your PC, take a look at CH Products'

**Jetstick.** This 'stick bears a strong family resemblance to CH's high-end Flightstick and Flightstick Pro, but it costs a lot less. The Jetstick foregoes features such as auto-fire and throttle in favor of a quality feel and a moderate price of about \$40. Buttons respond with a solid "click," and the joystick feels like it could take some serious punishment and still keep playing. If you're looking for bang for the buck, the Jetstick is a winner. Mac owners can get that same Jetstick quality, but not for the bargain price. (CH Products; 619-598-2518; PC, \$39.95; Mac, \$74.95)

—Christopher Lindquist

The Jetstick upholds CH Products' reputation for quality, but at a lower price.

STD's PC Optix combines several high-tech features in a single 'stick.

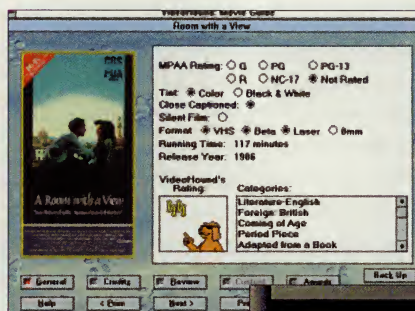
PHOTOGRAPHS BY DAN CLARK

## Flick Picks

Don't you just hate it when the gang comes over to watch a video, but you can't agree on what movie to rent? Well, your Saturday nights are in for a big improvement, thanks to **VideoHound Multimedia**. Based upon the 1,530-page video guidebook *VideoHound's Golden Movie Retriever* by Visible Ink Press, this CD-ROM packs reviews of 56,000 videos.

Like Microsoft's Cinemania '94, VideoHound lets you search for video reviews based on various criteria, such as title, actor, or genre. VideoHound provides basic information such as MPAA rating, format, and release year along with generic reviews and bare-bones ratings—on a scale of 1 to 4 milkbones!

The multimedia in VideoHound Multimedia consists of box stills of each video that appear with its review and sound clips associated with particular movie categories. If you want to see video clips of your favorite videos, forget it.



Sniff out the details—and VideoHound's bone rating—for your favorite movie.

But the best thing about VideoHound is that it divides the videos into more than 1,000 different categories, so it's easy to find a movie that suits your tastes. You can search for movies that fit any combination of categories, like Bad Guy Androids, Comedy, and Amy Fisher. Not every search is guaranteed to yield results, but

you'll have plenty of fun trying.

With the promise of such interesting searches, it's too bad that VideoHound doesn't make the process easier. You frequently have to backtrack to the main menu to add new categories to your searches, the instructions in the manual and online help don't match what you see

on the screen, and your previous search remains active unless you remember to clear it. It's also not easy to create your own personalized list of must see movies.

But once you master VideoHound's quirks, you may find yourself so wrapped up in searching for the perfect movie, you won't make it to the video store! (Visible Ink Press; 800-776-6265; CD for Windows, \$79.95)

—Christine Grech





## Mac Attack!

If you have the soul of a hacker and the technical skills of Jerry Lewis, take a look at **The Macintosh Joker**. Author Owen W. Linzmayer has put together 33 devilish tricks guaranteed to leave friends or co-workers bewitched, bothered, and bewildered. Unlike computer viruses and other high-tech vandalism, the pranks in this combo book/disk set monkey with your victim's Mac temporarily—they don't do lasting damage.

Install Sonic Boom, for instance, and whenever your victim does anything that causes a system beep, the desktop momentarily shatters with random cracks accompanied by the sound of breaking glass. The Backwords trick reverses the onscreen text, while Solvent makes the desktop look like it's melting. And it doesn't take a genius to figure out the sound clip that MacBarf plays each time the system ejects a floppy disk.

Linzmayr is a bit of a Jekyll-and-Hyde character, first dismissing the little pranks as lighthearted fun, then going to great pains to describe how to cover your tracks so your victim can never dig them out of his hard drive. So do what you will. Just remember to keep up those life insurance payments. (Hayden Books; Mac, \$19.95)

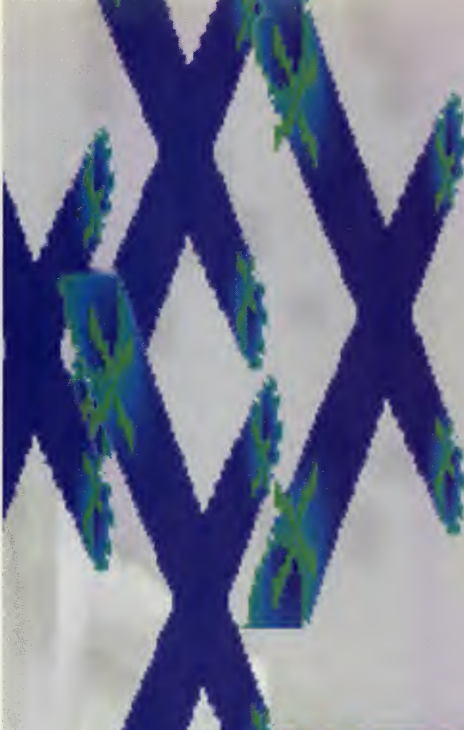
—James Daly



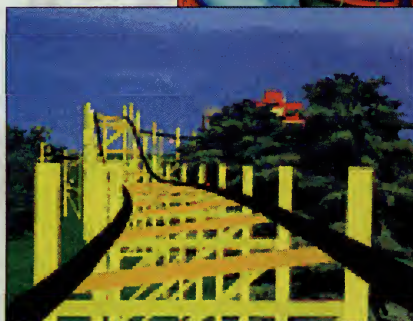
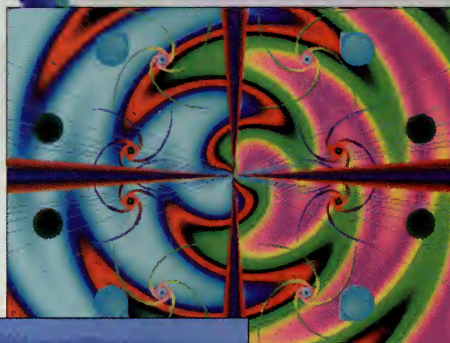
If you're not careful, The Macintosh Joker will take a bite out of your desktop.



Turn your menus into a cow fest with this trick.



Razzle Dazzle 3-D's worlds combine sounds and images for postmodern electronic



If you have the computing horsepower, Coaster offers a terrific ride.

## Wild Rides

Screen savers have come a long way, baby. At first they simply darkened the computer screen to prevent your spreadsheet from becoming a permanent fixture on your monitor. Later incarnations sported flying toasters, tyrannosaurs, and even Bill Gates's disembodied noggin.

Now Road Scholar Software has gotten into the act with **Razzle Dazzle 3-D** and **Coaster, The Screen Saver**, a pair of power-hungry pixel protectors. (Of course,

no one really needs a screen saver with today's monitors, but don't let that stop you.)

Razzle Dazzle 3-D moves you through two- and three-dimensional environments that glow, pulse, and throb with Pink Floyd intensity.

Razzle Dazzle even includes its own "self-composing music generator," seemingly designed to annoy everyone around you. If that's not enough, you can always customize the program with your own graphics, video, and sound files.

If psychedelia isn't your cup of herb tea, check out Coaster. You can take high-resolution "virtual rides" on four of the best roller coasters in the world, including the Giant Dipper and ThunderHawk. But the price of admission is high: to run Coaster you'll need a 486DX PC with 4MB to 8MB of memory, and 15MB of hard disk space to load all the images. And that's not all. To get the best video performance, Coaster requires local-bus video using a Cirrus Logic True-Color VGA Controller.

If you're lucky enough to have such a system, this screen saver looks and sounds great. If you don't, you'll get a blurry, jerky ride that saves your screen while driving you crazy. (Road Scholar Software; 800-243-7623; DOS/Windows; Razzle Dazzle 3-D, \$49.95; Coaster, The Screen Saver, \$59.95)

—Christopher Lindquist



# Spotlight

CNN TIME CAPSULE

## Last Year's News

**R**emember 1993? It was that long fuzzy period between Dick Clark's New Year's Rockin' Eve 1992 party and Howard Stern's gross-fest a year later. If you're having trouble recalling the key political and social upheavals of the year, take a multimedia stroll down memory lane with **CNN Time Capsule 1993: 100 Defining Moments of the Year**.

The disc highlights memorable events in order of importance to CNN, from the Waco tragedy at number one to notable



David Letterman's big jump from NBC to CBS rates the 48th spot.

obituaries in the 100th spot. Of course, you can skip around to whatever most interests you. Each segment runs 30 seconds to a minute and includes a narrated video clip. Background text summarizes each event.

But be warned. In the eyes of CNN, celebrated cradle-robber Joey Buttafuoco running around with his pants down is far more significant than North Korea's attempt to build a nuclear bomb. Still, it's all here: deadly hamburgers in Washington



The Branch Davidian compound goes up in flames, the most explosive moment in 1993, according to CNN.

state, doctor-assisted suicides, and presidential haircut.

Historians will tell you it's tough to capture the tenor of any year, but this disc generally does the job. Fact is, it's a lot like CNN: simplistic, but indispensable. (Vicarious Entertainment; 415-261-1900; CD for Windows/Mac, \$29.95) —James Daly

## An Unadulterated Look at Comic History

**I**f you thought Sega's NightTrap game got a bad rap from Congress, then you won't be surprised to learn that a 1954 Senate subcommittee linked juvenile delinquency to reading comic books. This and many other intriguing stories about the evolution of comic books

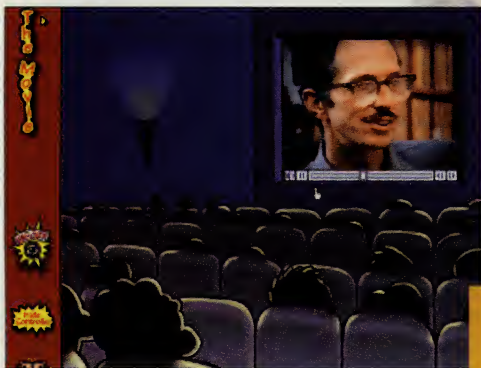
past and present. Humorous sound effects, period music, and dialog—though not synced seamlessly with the video—invigorate the presentation and help you overlook the small QuickTime video window.

Stan Lee recounts the origin of Spiderman. Al Feldstein and William Gaines describe *Tales from the Crypt* and their bouts with censorship, paranoia, and the comic code; and Robert Crumb and Gilbert Shelton talk about the underground movement of the 1960s. The film ends with insights from some of today's most provocative graphic artists, including Sue

Coe, Jaime Hernandez, Frank Miller, and Art Spiegelman.

Best of all, *Comic Book Confidential* includes 120 pages of comics from the film's 22 featured artists. These reproductions are true to the originals, but you can enlarge each section of a page without affecting the image quality. Scott McCloud, author of *Understanding Comics*, adds informative commentary.

Illustrated biographies of the artists, checklists of their work, and a somewhat choppy interview with Mann round out this fascinating title. (Voyager; 800-446-2001; CD for Mac, \$49.95) —Bill Meyer



Underground artist Robert Crumb talks about LSD, the counterculture, and starting San Francisco's Zap magazine.

come to life in Voyager's new **Comic Book Confidential**, based on the Ron Mann documentary.

Mann's detailed film features the medium's most influential artists and writers,

### Multimedia Maus

**MAUS: A Survivor's Tale**, is Art Spiegelman's Pulitzer Prize-winning graphic novel of his father's Holocaust experiences, drawn as a battle between Jewish mice and Nazi cats. **The Complete MAUS** on CD-ROM adds even more depth to the story with video clips, recordings of Spiegelman's interviews with his father, preliminary sketches, and commentary about the making of the work. It doesn't add animation or audio to the original comic, but the story is so pow-





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THE ADVENTURES OF NIKKO

## Build Your Own Stories



Kids call the shots in *The Adventures of Nikko*.

Successful enterprises often combine the old and the new, the traditional and the innovative. That's what The Software Toolworks has done with **The Adventures of Nikko**, which the company bills as a children's "interactive story-builder."

The label "interactive" appears on just about every kids' software product these days, and in a storybook it generally means that kids can click on onscreen objects for a little razzle-dazzle animation. This is one of the traditional elements the title draws on—click on the bird in the opening screen, for instance, and it does a zany zoom around the branch it's sitting on. The other—and older—tradition behind Nikko is the

choices determine the course of the action, as Nikko hops on his bicycle (or into his car) and sets off in search of adventure.

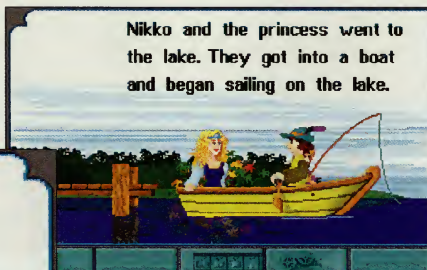
Does he find it? That depends. Choose the princess as Nikko's companion, and you can cover traditional fairy-tale territory. Choose the frog and you might have an amusing time at the lake. It's worth noting the "you" here. Though the intended audience for Nikko is aged 4 to 8, the fairy-tale elements mean it's likely to appeal to younger kids, too. And because the narrator reads the sentence only *after* kids have filled in the blank, the preschool crowd will need an adult to read the onscreen text.

Kids won't need assistance to watch the stories they've saved, though, which play back like minimovies. Coloring in black-and-white renderings of the onscreen pictures is strictly kids-only as well.

The ability to participate in the story is definitely Nikko's strong point, since the graphics will look



After they choose, the program reads the result.



As the prince, Nikko might wind up with a princess.

fairy tale, complete with princesses, castles, and strange transformations.

But The Software Toolworks stakes out new territory by redefining

the notion of interactivity. Previous electronic storybooks haven't involved real choices—though kids were free to explore, they weren't able to affect the plot. The Adventures of Nikko puts an end to that limitation on its first screen, a woodland scene with the caption, "Once there was a \_\_\_\_\_ named Nikko." It's up to kids to decide whether the hero will be a handsome prince or jolly-looking elephant. Subsequent

blocky and primitive to kids accustomed to such advanced titles as Arthur's Teacher Trouble. And Nikko's hot spots lack the detail and originality of those in Brøderbund's Living Books series. The Software Toolworks claims that the story contains 42 possible pathways and 200 combinations of events. But that doesn't mean you can look forward to 200 different outcomes—no matter what you do, only a few types of conclusions are possible.

That's unlikely to bother kids, though, and fairy-tale lovers are the ones most likely to appreciate the irony of the princess who turns into a frog. (The Software Toolworks; 415-883-3000; DOS, CD for DOS, \$39.95)

—Peggy Berg



The best-selling baseball title of all time;  
NEED WE SAY MORE?!??

QUICK! Guess what  
system this game's for??  
DUH!

The only big  
league park we  
didn't include was  
YELLOWSTONE.

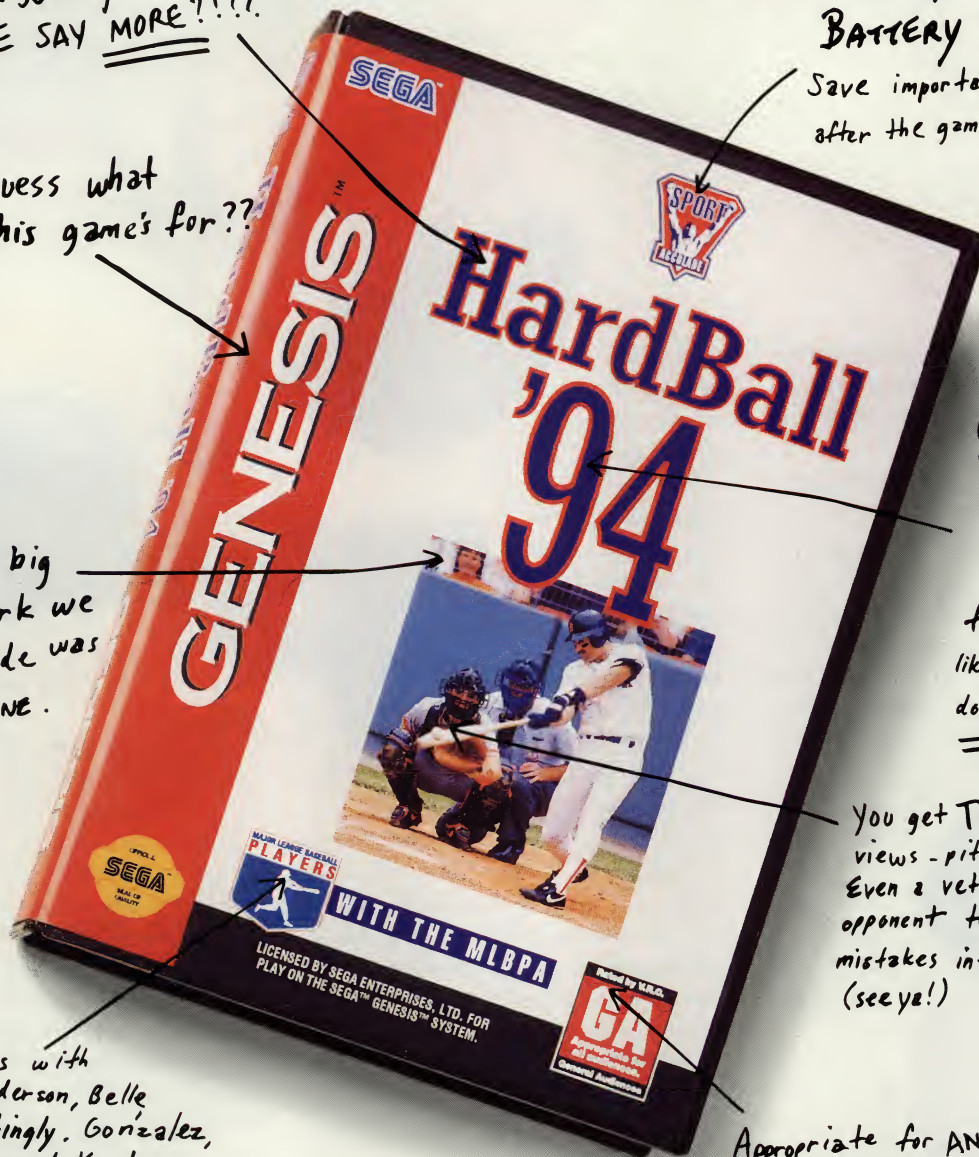
Spit seeds with  
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Justice, Mattingly, González,  
Van Slyke, and Kruk...  
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Circle 14 on Reader Service Card



## TWYLA'S WORLD

### CD-i 4U2

This month I got to try out something called **Compact Disc-interactive**, or CD-i, from Philips (800-824-2567, \$499).

CD-i is a black box that looks like a VCR and connects to your TV set. It plays games that are on CD-ROM discs, and you control what happens on the screen with a cordless remote control. There are other

systems that do the

same thing, and it's

too bad that they

all use different

types of CDs.

Deciding which

one to get

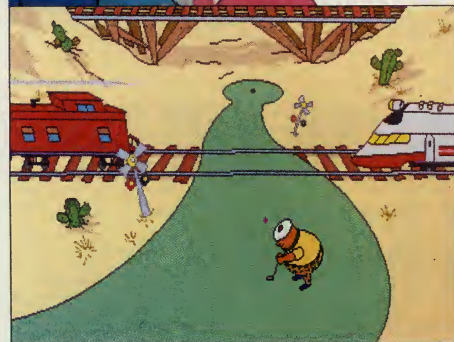
depends

on which

one has the

games you

like best.



I loved **The Wacky World of Miniature Golf**. The animations that play when you get the ball in the hole are really fun to watch.

I tried out a whole bunch of CD-i kids games and programs from Philips, and I also invited my cousin Zach, who is 5 years old, to play with some of the ones for younger kids.

A lot of the software is sort of a cross between games and school stuff. I think the CD-i people think that parents will like the educational stuff better than the shoot-'em-up video games. That may be true, but I liked the ones that are just for fun.

Zach's top choice was **Berenstain Bears on Their Own** (\$39.98). He loved zooming across the map of Bear Country, dropping into places he knew about from the Berenstain Bears books, like the country store or Lizzy's house. The games on the disc include educational things like math problems and recognizing patterns.

Another disc that is kind of like that is **Hanna-Barbera's Cartoon Carnival** (\$39.98). It has all the regular cartoon



characters like Yogi Bear and the Jetsons. I was surprised that Zach didn't like it very much, especially since his mom doesn't let him watch very many cartoons.

One problem Zach had playing with



**Philips's Roller Controller makes it easy for kids to work the CD-i.**

the CD-i was that it took a long time for him to get used to the remote control. He loved pushing the buttons and saying, "Action," but he didn't seem to understand that there is an invisible beam that shoots over to the CD-i box. I had to keep reminding him that it doesn't work if you point it at the ceiling.

The company knows that might be a problem for kids, so they sell an extra **Roller Controller** (\$79.95). It has a big blue roller ball and red action buttons, and it connects to the machine by a cord so there's no pointing. I think kids as young as 3 or 4 could understand how to use it.

Anyway, both the Berenstain Bears and the Hanna-Barbera programs would be good for families with younger children. But by the time you are eight or nine, like me, you want something more grown up.

Even though my mom thought it was yucky, **Girl's Club** (\$49.98) is a really fun game. It's all about boys and dating and stuff like that. You play with your friends—and new friends on the screen—and try to guess who the other players would want to go out with. The host of the game is Nickelodeon's Heidi Lucas.

Probably my favorite CD-i game is **The**



### Wacky World of Miniature Golf

(\$34.98). It has 18 really tricky holes of golf, where you have to get past every kind of obstacle you can imagine, like sharks, exploding volcanoes, and motorcycle gangs. The animations are funny

enough that you don't mind seeing them again and again, but the obnoxious jokes told by the host can get a little old.

I did have one problem playing. You have to wait a bit between when you push the button and when the action begins on the screen. Actually, this is true of a lot of the CD-i games—they're kind of slow. Still, if you play Miniature Golf a lot, you start to learn the tricks and your scores get better.

My third favorite was the one grown-up game that I tried, **International Tennis Open** (\$49.98). It looked tons better than the Sega Genesis tennis game that I've played. It will take me a long time before I am really good at controlling the players, but I got the hang of it enough to win a few games.

Some of the other discs I played I didn't like as much. **The Best of Draw-50** (\$34.98) tries to teach you how to draw by letting you copy exact strokes. It's a really dumb way to learn art, because you might get good at drawing a horse's head, but you



**Don't tell my mom, but Girl's Club is going to be really fun at my next slumber party.**

Piccolo. [See "Every Good Boy Does Fine, (Girls Too)," May, page 28.]

Besides its own special discs, the CD-i machine lets you play regular music CDs, Photo CDs, or (with a special cartridge) movies on CD. My dad and I watched *Top Gun*. It's pretty much the same as

would have no idea how to draw a dog.

Another program I tried, **Children's Musical Theater** (\$29.98), isn't half as good as some of the music software I wrote about a couple of months ago, especially Opcode Interactive's Musical World of Professor

watching it on videotape, except you can select which scene you want to jump to.

I don't know if this is the best way to play discs through your TV since I haven't tried all the other ones, but there are a lot of discs for kids, so you're bound to find some you like. I hope we get to keep the CD-i system for a long time.

—Twyla and Dan Ruby

*Twyla Ruby, 8, attends Montclair Elementary School in Oakland, California. Her dad, Dan, helps her write this column.*



**Hanna-Barbera Cartoon Carnival is OK for little kids. Can you believe that Zach didn't know the name of Fred Flintstone's wife?**

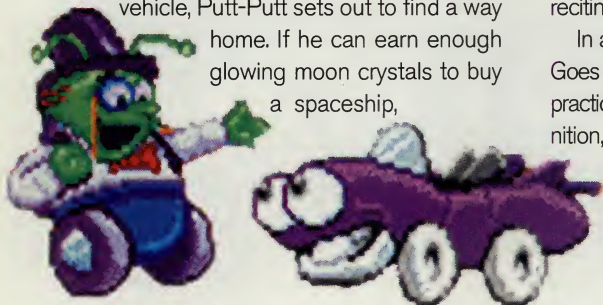




## ASTRO ADVENTURE

### Putt-Putt Goes to the Moon

In his latest adventure, **Putt-Putt Goes to the Moon**, the lovable little car finds himself on the moon after an accident at the fireworks factory propels him into outer space. With his puppy pal Pep and his new friend Rover, a moon-terrain vehicle, Putt-Putt sets out to find a way home. If he can earn enough glowing moon crystals to buy a spaceship,



Kids help Putt-Putt find a way home from the moon.

he'll be able to get back to Earth and Cartown.

Kids love this game—one 5-year-old boy we know heard the theme music, abandoned the game he was playing, and came searching for Putt-Putt. He was totally captivated, reciting most of the dialogue as he played.

In addition to being just plain fun, Putt-Putt Goes to the Moon helps children ages 3 to 8 practice beginning reading skills, object recognition, problem solving, coordination, and counting. The game comes with a coloring and activities book that reinforces the concepts introduced in the



Putt-Putt makes friends with Rover, the moon-terrain vehicle.

program. There's also an arcade-style game built in to the adventure called Bear Stormin', where kids use the mouse to fly Fatty Bear's plane. They must hit balloons to earn fuel while trying to avoid such dangerous objects as trees and barns.

Kids will come back to this game again and again because they can choose different paths each time. One time they might like to play Alien Tag, while another adventure might lead to star gazing at the Moon City Observatory. If kids get stuck, clicking on Putt-Putt always results in helpful suggestions and reminders. (Humongous Entertainment; 800-245-4525; DOS, CD for DOS/Mac, 3DO, \$49.95)

—Sarah Tilton

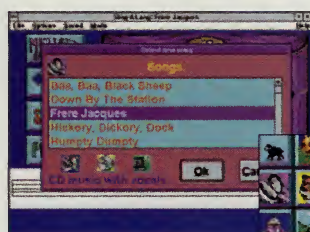
## Karaoke for Kids

Children love to sing, and **Dr. T's Sing-A-Long Kid's Classics** uses multimedia to teach them a whole songbook's worth of fun tunes, including "Oh Susanna," "Oh My Darling Clementine," and "I've Been Working on the Railroad."

The program's Children's Musical Theater includes animations for 26 classic songs. Kids follow along with music and lyrics that scroll by on screen. You can watch the music notation as basic notes or as guitar chords with finger positions. Either way, a bouncing ball or changeable icon indicates where to sing and play. As in true

karaoke, you can drop out the vocals so that your kids can see the words while they do the singing.

The theater has big, visible buttons for choosing, playing, and rewinding songs. Each button's function is identified with a word and a symbol.



Children's Musical Theater lets older kids sing along with the music.



The Little Kids Mode uses icons to let even nonreaders find the songs they want to sing.

Play and stop, for example, use green and red traffic lights.

"Little Kids Mode" is a second theater interface for younger children. Here, each tune is represented by an icon. For example, a duck initiates "Old MacDonald Had a Farm." This is a good place for nonreaders to explore, but they have fewer options.

Unfortunately, the vocals in Dr. T's Sing-A-Long are a bit stiff and old-fashioned. Some of the animations could also profit from a freer style. The more childlike and off-beat singers that croon out each tune's name at the song selection screen are much more spirited.

Overall though, this title combines an excellent repertoire of songs with an easy-to-use interface. (Dr. T's Music Software; 800-989-6434; Windows, CD for Windows, \$39.95)

—Bill Meyer



LIGHTS

*CAMERA*...



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# INTERA

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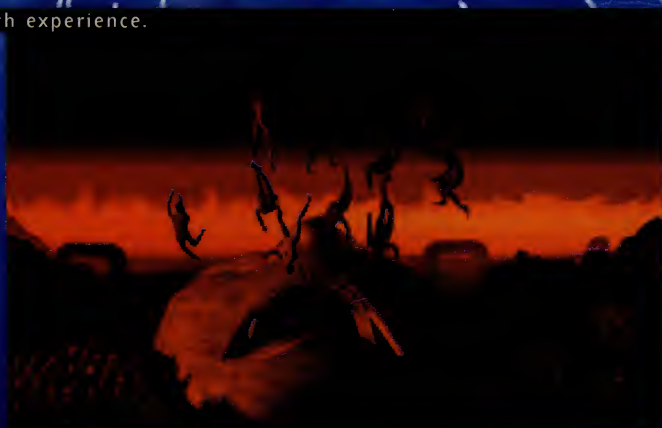


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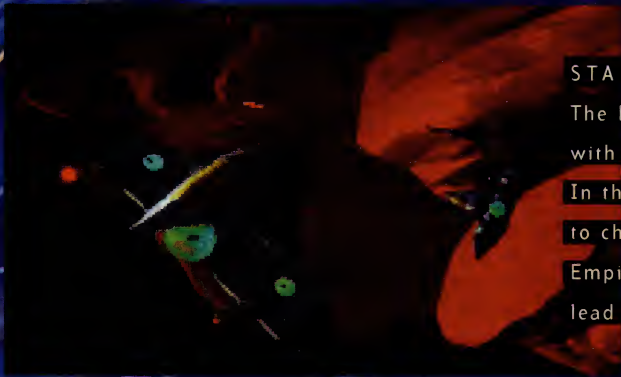
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# CTION

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# W

hen Take 2 software enters your computer, you go in with it...winding your way through hyper-real environments that push role playing, simulation, and edutainment beyond known boundaries. All created by advanced technologies that enhance the experience in ways you've never seen or felt before. It's a barrage of entertainment, adventure and education emerging this fall that will thrust you into the Take 2 experience. It starts with interaction. You'll find there is no end.

**TAKE 2**  
INTERACTIVE SOFTWARE





## Tube Man

Keith Ferrell

# Space Cowboys

**T**he best television ever broadcast came from space, and I'm not talking about "Star Trek."

Twenty-five years ago this summer, our species was treated to live images of humans walking on the moon. The most dramatic instance of space TV, those images are nonetheless just part of what the partnership between space exploration and television has given us. Consider Voyager's photos of the very strange and wonderful outer worlds. Viking on Mars. Spacewalks. Skylab. Hubble's repair. Even Challenger.

Space has always made good TV.

Now, the special relationship between space programs and television programming is once more embarked upon an evolutionary path, perhaps to be guided in part by the computer industry's very own Bill Gates.

Microsoft chairman Gates, Craig McCaw (of McCaw Cellular fame and wealth), and a very small band of outside investors plan to launch the most ambitious orbital program ever undertaken by private industry. In a proposed \$9 billion partnership between these two heaviest of hitters, a new company called Teledesic will deploy a system of 840 low-earth orbit satellites. The purpose of the satellites is to extend the marvels of the interactive information superhighway throughout the world.

These small but high-tech satellites, whose spiritual if not tactical antecedents include the "brilliant pebbles" of the Strategic Defense Initiative, are intended to provide the capacity and bandwidth needed to deliver two-way interactive video, voice, and data communications anywhere. Anywhere.

And all of it by 2001 A.D. Arthur C., are you listening? Stanley, do you hear?

A lot of people are listening, and looking very closely at Teledesic's proposed satellite system. Within days of its March announcement, Teledesic was called everything from visionary to hare-brained, with neither label

ending up dominant. A case can be made for either side, and it may be that both sides are, indeed, right. The best visions, after all, often start out more than slightly hare-brained.

Check out the vision thing. Two of the world's hottest young info/telecom/entrepreneurs, billionaires both, seek to stake out low-earth orbit for a communications network all their own. (Well, not quite all—AT&T, when they merge with McCaw, is out there somewhere.)

Low-earth positioning means relatively cheap launches, and fast communications—your signals don't have to go as far up or return as far down. And it means relatively cheap and small equipment on the ground, too.

But low-earth orbit also means you need a lot of satellites. The number of jewels in the Teledesic tiara tells you something of the market Gates and McCaw perceive, which is all the many billions of us, every person on the planet, given a certain level of continued economic expansion.

Good, or at least enthusiastic, science-fiction novels have been built out of less.

Vision's one thing, the realities of space are another. Let's look at some of the pragmatics. First and above all, space isn't cheap. Everything put into orbit—even low orbit—ends up costing more than originally planned.

Plus you've actually got to get the satellites up there. Lobbing 840 new birds over six years—and that's if they get going by January, '96, which they probably won't—is going to consume a sizable percentage of global launch capacity. Assume an 8 percent failure rate

either on launch, insertion, or satellite power-up and operation. That means preparing and launching a total of more than 900 satellites. If the satellites go up one at a time, we're talking about a launch schedule of one satellite every two or three days for six years.

Even if Teledesic plans multiple payloads on top of each rocket, the launch schedule is horrific, and fraught with risk and potential delays. And once the satellites are in space, they still have to be tracked, maintained, and replaced. Just tracking the Teledesic system will take more monitoring capacity than NORAD could muster at the height of the Cold War.

And despite its aggressive scope, Teledesic's refrigerator-sized satellites won't have the skies to themselves. Motorola is already well along with plans for a \$3 billion or so satellite network called Iridium, with several dozen birds designed to serve the cellular phone market. TRW is looking into a satellite network of its own, and so are Westinghouse and others.

But, at the moment, Bill Gates and Craig McCaw seem the pair of space cowboys holding

the best cards. And if neither one of them is James T. Kirk or Jean-Luc Picard, much less Neil Armstrong, they've still put together a screwy, hare-brained, lofty, visionary, starry-eyed plan that will, if nothing else, give us good viewing on the business shows in the months and years ahead.

And isn't that just the sort of thing we want our space heroes to do?

*Keith Ferrell is editor of Omni, editorial director of Compute, and science and technology editor of Penthouse, each of which covers the interactive revolution in its own way.*

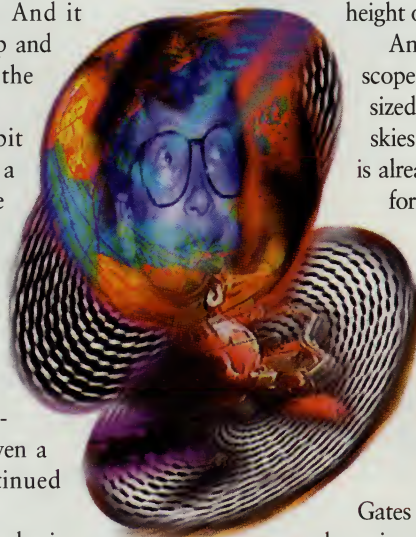


ILLUSTRATION BY LANCE JACKSON

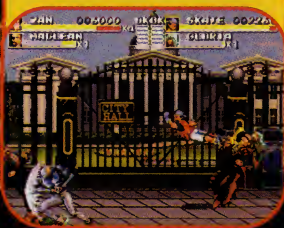


# STREETS OF RAGE 3

**Go electro!** Mr. X's minions meet their match in Dr. Zan's electrifying Robotic Reach!



**Lift-off!** Use Skate's shreddin' airborne rollerblade spin-attack to Battle the 'Bots!



**Axel and Blaze are back** and getting their kicks with all new Martial Arts Moves!



It's an all-out turf war featuring MORE weapons, MORE moves and MORE outRAGEous action than ever before. Mr. X has hatched the ultimate evil plot-but what he didn't count on was a bone-crunching counterattack from Blaze, Axel and Skate, together with an all-new character, Dr. Zan...and a surprise helper! It's 24-megabits full of jump kicks, power-slams and spin punches set to thrashing digital sound and plasma-pumping music!



## HIT'EM LIKE A TON O'BRICKS!

AND TAKE BACK THE STREETS  
WITH SEGA GENESIS™





## Game On

Rusel DeMaria

# Delayed Gratification

**Y**ou've seen the ads and heard the hype. And now you can't wait to play Super Air Combat Trolls & Dragons Hockey in Super VGA on CD-ROM—or whatever. The ad says it's available now in your favorite software store. The problem is, it's not.

What's the deal? They promised and it didn't show up. Don't you just hate it when they do that?

So you conclude that game developers are scum. That they can't keep their word. That they should be shunned at parties and made to wear humiliating identification tags.

But game developers, on the whole, aren't bad folks. They're visionaries and dreamers. They want to be on time. It's just that they continually ask themselves, "Is this fun?" and if they aren't sure, they start over to make their games more interesting.

Larry Holland created LucasArts' X-Wing, TIE Fighter, and a host of other fabulous hits—many of which, like Secret Weapons of the Luftwaffe and X-Wing itself, have been late (sorry, Larry). He explains that game creation is an amorphous process.

"It's not something tangible," Holland says. "It's intuitive. And with technology in constant change, it's a little like throwing darts at a moving target and trying to be really clever while doing it." There's no easy way to plan by fixed schedules when the goal is in constant motion.

Holland also blames delays on a disease he calls "creeping elegance." He explains that developers must strive for perfection but also "know when to quit." Constant polishing works well with the family silver, but it can make a game late to market.

That's only one reason game development almost always takes longer than expected. Ken Balthaser has overseen the

development of hundreds of games, first for Sega and currently as president of his own production house, Alexandria. "You have to realize that electronic games are extraordinarily complex," Balthaser says. Games combine the diverse talents of artists, animators, musicians, programmers, management teams—in a technology that practically reinvents itself every three to five years. And then you get the bugs. "You might spend a week trying to track down a single bug," Balthaser says.

Developing a game is sort of like producing a movie, and movies have a better record of making their deadlines. "But," says Balthaser, "the movies have been using the same basic technology for decades—35mm or 70mm sprocketed film. We're constantly reinventing our projector. Combine with that the element of nonlinear human interaction and fun, and it becomes immensely more complex."

Jordan Mechner, the man behind Prince of Persia, has a rule of thumb: "Figure out how long it will take and then double it." To his chagrin, Mechner says, development still seems to take twice as long as the new estimate.

On the other hand, some companies boldly claim that they will meet their deadlines. Rocket Science's Steve Blank and Peter Barrett start by spending weeks on preproduction—planning the whole game ahead of time. They also spend a lot of time creating tools—predictable technologies that will let them assemble games from disparate parts. Weekly scheduling meetings help identify and correct inevitable glitches in the production process. Finally, production people

hired out of the pressurized worlds of movies and special effects have experience meeting inflexible deadlines. "If they give you a \$2 million check to produce a commercial for the Super Bowl, it had better be on time," says Barrett. With Rocket Science's first games due to ship soon, it will be interesting to see if these methods work.

The bigger question is that if everybody knows game development is prone to irregularity, delays, false starts, and other creative maladies, why don't the marketing people

take that into account when they set release dates? The answer is that the world of commerce demands that companies meet specific schedules, whether they're realistic or not. Every company wants its hot new game out in time for Christmas, whether the project begins in February or July.

Sometimes it just can't be done, and consumers feel misled. That's why people complain about late products.

I say, "So what?" The company spends some money on development and loses some sales, but why should we care? So the game is late. Ever heard of delayed gratification?

For me, the real issue isn't when a game hits the market. It's how much fun it is when I finally get my hands on it. After all, there are plenty of new games hitting the stores and landing on my desk all the time. I try not to think of a game that misses its ship date as being late. I think of it as temporally challenged.

*Rusel DeMaria is the author of more than 25 computer and video-game strategy books.*



ILLUSTRATION BY GORDON STUDER



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*Across the Rhine* from MicroProse. And you thought heavy metal started in the 70's.

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## Party Girl

# Pennant Fever

If I had a meg of RAM for every hour my new boyfriend has spent staring at the tube this summer, I could build a supercomputer—or at least run a really whizzy flight sim. You see, it's baseball season. And the Party Girl has become just another frustrated sports widow.

Now I truly believe that Bobby is too smart for this ridiculous infatuation with the boys of summer. Hey, you don't retire a 26-year-old Microsoft millionaire without having something on the ball. But during baseball season, he morphs into a beer-drinking zombie. At the expense of his three usual obsessions—X-Wing, Doom, and me, if he's lucky—he just sits there glassy-eyed watching overpaid louts spit and scratch themselves. Talk about striking out.

But luckily, I have a life. And when the going gets tough, I go shopping—for computers, clothes, multimedia news, you name it. And I found a ton of the latter one recent Sunday afternoon at my favorite shop spot, the Stanford Mall in Silicon Valley. In the little outdoor café sat none other than English rocker **Peter Gabriel** eating vegetarian couscous with a bunch of stuffy suits. Never above eavesdropping, I sidled up and learned that his passion for world music is about to meet world shopping. Apparently, Gabriel is working on a European interactive home shopping network with a focus on international goods. Should Gabriel stick with music and multimedia and leave the shopping to us professionals? Maybe, but at least he's not spending the summer consumed with batting averages and earned-run averages.

And it turns out that **Steve Nelson**, the guy who created **Xplora 1 Peter Gabriel's Secret World**, is busy, too. Word is, Nelson is masterminding an interactive CD-ROM movie starring one of my favorite egomani-

cal actors, **Richard Dreyfus**. I also hear that thriller novelist **Tom Clancy** is working with Los Angeles-based **Nova Logic** on some sort of superrealistic submarine game and that supermodel **Vendela** is finishing up an exercise disc for **Warner New Media**.

When the café closed, I went back to Bobby's house, but he was still zoned out in front of a doubleheader between the Padres and the Marlins. I couldn't even grab his attention by loading up my prerelease copy of the next version of **Tony LaRussa Baseball**, which accommodates Major League Baseball's new three-divisions-per-league lineup. "I'll check it out later," Bobby mumbled, and popped another cheesedog into the microwave.

Thoroughly disgusted, I grabbed the keys to Bobby's flashy convertible and hightailed it over the Golden Gate Bridge to a party **Brøderbund VP Mickey Mantel** (no, not the former Yankee slugger) was having at his killer Marin County spread. There were all kinds of multimedia big shots there, not to mention a smattering of Hollywood types lounging by the Jacuzzi.

I overheard some **Electronic Arts** exec blabbing about plans to sign up award-winning music video director **Lo! Creme** to direct an action game. I hope EA does it. If you know Creme's wild videos—including Herbie Hancock's "Rocket," The Police's "Synchronicity," Frankie Goes To Hollywood's "Two Tribes," and 10cc's "Cry"—you know he's quite a catch.

Up on the deck, the chatter concerned **Fathom Pictures' Garry Hare** and his joint

venture with **The Griffin Group**. Griffin-Fathom should be shipping **The Gold Tee at Big Horn** golf game for the **Apple Newton** any minute. But I hear that its upcoming PC and Mac CD-ROM release will be even hotter. **The Skins Game at Big Horn** will let you bet on individual golf holes, just like they do at the real Big Horn course every Thanksgiving. It'll feature real video of real digitized golfers, not to mention a caddy that pops up to advise you on clubs and strokes.

Speaking of advice, I have one word for the people at **Trilobyte**: "Don't!" Trilobyte, of course, is the Oregon company that brought us such ground-breaking hits as **The 7th Guest** and, more recently, **The 11th Hour**. Apparently, **Microsoft**—dying to become a leading multimedia supplier—is thinking about buying the company.

But Trilobyte definitely shouldn't sell out. This is one of the most creative, innovative companies around, and its forthcoming **Dog Eat Dog**, an offbeat salute to nasty office politics, is a prime example of why. Getting sucked into a major corporation is a huge mistake for anyone, especially creative multimedia and game developers. And consumers like us end up suffering as the imagination gets squeezed out of the industry.

When I finally got home, Bobby apologized for letting a bunch of grown men playing a kids' game come between us. But in the mirror I could see him sneaking a peek at the postgame highlights.

What's a party girl to do? I'll try to keep busy digging up the hottest multimedia product news and inside gossip. But if Bobby has his way, I may have to do it from Candlestick Park. Look for me near the concession stand.



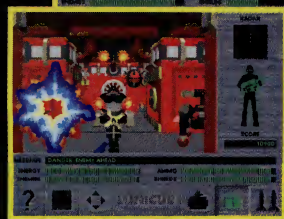
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You're one of the last free Earthlings left: your team on Moonbase Lunicus will have to save the world. Grab your cybersuit. Strap on the ol' plasma cannon. Jump in your shuttle and scream into the fire-fight of your dreams.

This lightspeed arcade movie brings you the best of both universes: butt-kicking action with CD-ROM intensity, and all of it with killer attitude! Hyper-real environments. Skull-crushing music-tracks. Kick droid-butt against tough odds that keep rising to match your skill. There's no waiting for anything, not even if you need to breathe.

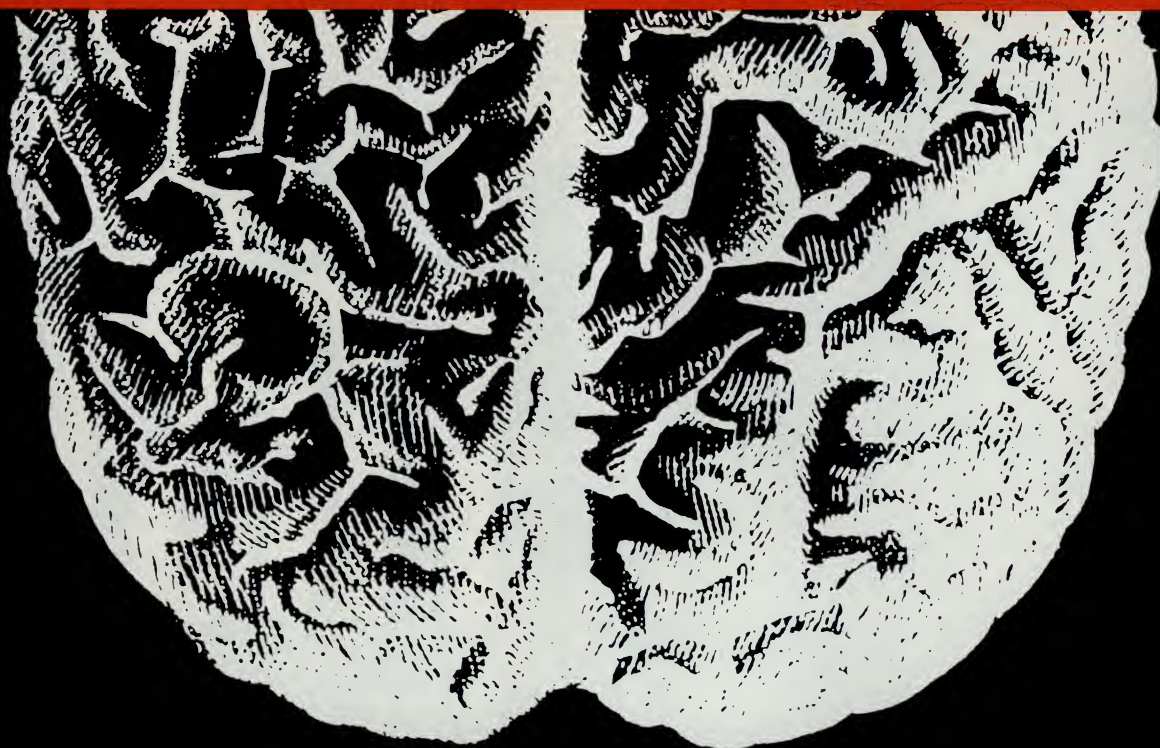
It's a dirty job but somebody's got to do it.

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### Burn Cycle

In this live action video/computer hybrid, you play Sol Cutter, data thief, whose brain's been downloaded with a 24-hours-til-you're-dust computer virus. Coming this fall on CD-i and CD-ROM.



### Little Devil

You are Murt, a grumpy little hornhead, wending your way through the treacherous Labyrinth of Chaos in search of the mystic pizza. Coming this summer on CD-i, CD-ROM and PC Floppy. (Optional Digital Video cartridge required for CD-i.)



### NFL Trivia Challenge

You're a 300-lb. toothless lineman, tackling over 1,500 bruising questions. Answer right and gain yardage, touchdowns and the adulation of thousands of screaming fans. Now on CD-i.



**DON'T LET THE REST OF THEM DIE IN VAIN.**

### Surf City

It's about meeting cute surfers, playing spin-the-bottle, and cruising the main drag of the hippest beach on the coast. It's the first interactive musical with tunes from the '60s. It's most tubular. And it's now on CD-i.



Your kids are in a kooky crayon factory run by robots. They get to color the characters and scenery in a fun, interactive children's story narrated by actress Shari Lewis. This fall on CD-i.

### Crayon Factory



Hey, Metalheads, Wayne and Garth are back. This time a record producer is out to bag Wayne's girl, Casandra. And mega-babe Honey Homee is out to bag Garth. Shwing! Now on Video CD. (Optional Digital Video cartridge required.)

### Wayne's World 2

Philips has a massive arsenal of interactive titles to stimulate your cerebral cortex – over 150, with tons more coming. Intense games. Mind-expanding journeys.

Wholesome kids' stuff. Movies and concerts on Video CD. The entire gamut. All of them feature cool graphics, great sound and will tap as much life as possible out of that dying organ inside your skull.

For more input on Philips CD-i, have your brain command your fingers to dial 800.824.2567




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**PHILIPS MEDIA**









**M**aybe everyone needs to read a little Sun-tzu, a bit of von Clausewitz, a smattering of Mao. These classic combat theorists would have understood what's going on in the CD-ROM game-player market.

The furor over compact-disc entertainment looks like an electronic remake of the Thirty Years War, with software makers switching allegiances and several companies claiming bragging rights as master of the digital domain. Sooner or later, though, a dominant set-top TV box will rule.

Unfortunately, the first casualty may be your wallet. Pick wrong today and you'll either end up with an expensive collection of obsolete games to set alongside your eight-track tapes, or you'll be cooling your heels while developers play catch-up and release a more complete library.

That's because each combatant nails players to its own proprietary list of titles. With only a few exceptions, each box's CDs are usable only on that system.

If war, as von Clausewitz said, is but politics by other means, then the battle of the CD formats is just marketing by another name.

ILLUSTRATION BY ANTHONY CHIAPPIN

**With four major CD-based gaming systems on the market, it's an all-out battle for control of your TV.**



Four CD set-top game boxes already wage war on your pocket-

book. Sega's Sega CD, Panasonic's REAL 3DO Interactive Multiplayer system, Philip's CD-i, and Pioneer's LaserActive are banging heads now, while a slew of new divisions are mobilizing behind the lines. Sadly, Commodore's CD<sup>32</sup> is missing in action.

Like most armies, the machines in the field share more similarities than differences. All rely on CDs as their software medium. With the right software all can display at least a few games that go beyond the typical kids' list of biff-bam-boom entertainment. All play audio CDs as well as their own game discs, so they can double as part of your stereo or home theater system. And all connect to the TV.

But the various game box battalions also show special traits that mark them as likely winners or losers. Some of these machines now offer—or will offer—plug-in cartridges that let them play movies on 5-inch compact discs, effectively transforming them into digital equivalents of the VCR. Thanks to

## Fighting For the Top of Your TV

higher horsepower, some display video in larger windows than oth-

ers—or even fill the entire screen with moving pictures—while offering more colors and smoother motion. (For more on video see "Pump Up the Video," June, page 42.)

Some companies plan to connect to the information superhighway, promising that their boxes will grow into 21st-century TV controllers that will let you communicate with others, play games over phone or cable lines, shop from the couch, or just veg out while surfing channels galore. And some machines let you play games in the more traditional format: cartridges.

Today's battle of the CD formats is a critical part of the electronic entertainment campaign of the '90s. We're still in the early stages of the war, with no clear champion poised to knock the silicon out of the competition. All we can do is take a snapshot of the campaign, spotting the players with the strongest software armies, most far-sighted marketing strategies, and boldest pricing tactics. Here's our take on the current crop of CD warriors.

## Sega CD

**T**he lowest-priced CD-ROM player on the market, Sega of

America's \$229 Sega CD is a plug-in add-on for the \$99 Sega Genesis video game machine you may already have in the den. A 1993 redesign places the Sega CD alongside the Genesis, not on top as before. This produces a box with a lower profile that is more suitable for racking with other television hardware, like a VCR or audio components. But it still looks and feels like a video game machine.

The Sega CD adds another ancient Motorola 68000 16-bit processor to the one already inside the Genesis. In games, however, two 16-bit chips don't equal one 32-bit chip. Combine them with the Sega's single-speed CD-ROM drive, and



**The video in *Ground Zero Texas* pushes the Sega CD to its technological limits.**

comparison pick, if only because it's available in several set-top box formats), the video is a long, long way from television quality. Although the Mad Dog video is displayed

nearly full-screen (typically, video in Sega CD games occupies only half the screen), the Sega's resolution is low, it displays a paltry 64 colors, and it's slow enough to appear as if frames in the film had been left on the editing room floor. The overall effect is like watching TV broadcast from a faraway station:

You can tell what's happening, but you'd kill for cable's clarity.

You'll never watch real movies on the Sega CD because the machine can't handle full-motion, full-screen video in

you've got the makings of a box that's technologically behind the times. Nothing illustrates that better than a short session with a video-heavy Sega CD title. In American Laser Games' Mad Dog McCree (a good

MPEG format—nor are there plans to add the capability. Technologically speaking, the Sega CD has already been pushed about as far as it's going to go. The announcement of a 32-bit add-on, however, may considerably extend the Sega CD's lifespan. (See sidebar "In the Year 2525..." on page 55).

Silicon isn't the whole story, though—not when the software selection plays as important a role as whiz-bang hardware. Here the Sega CD scores big points. Its extensive game-only software list shows signs of moving beyond the tastes of 14-year-olds who eat Genesis cartridges for lunch. Some are beefed-up cartridge-style games like Silpheed, while others such as Prizefighter, Ground



## Let the Battles Begin

**T**esting a game machine isn't like putting a computer through its paces. No benchmarks exist and no exam suite has been quantified to show in neat chart and graph form which machine is tops. For good reason. Decks run vastly different microprocessors and widely divergent operating systems.

That's why we came up with a scheme that evaluated the CD game decks in a number of critical areas. Taken together, these ratings produce a real-world score that reflects each machine's strengths and weaknesses.

■ **Software Support:** The depth and breadth of the existing library of games and multimedia titles through March 1994. (40%)

■ **Full-Motion Video Support:** The quality of full-motion (or as near to full-motion as possible) video, including size of video window, resolution, and speed. We also considered the ability to play MPEG movies and interactive titles with an optional add-on module or cartridge. (20%)

■ **Value:** How much bang you get for your buck. For most of us, the true bottom line. (20%)

■ **Graphics Quality:** How well the deck displays non-video graphics, including speed of image manipulation and color support. (10%)

■ **Controls:** Ease of use of the bundled game controller (if any) and convenience of deck front-panel controls. (5%)

■ **Peripheral Support:** The quality and quantity of available peripherals, either from the manufacturer or third-party companies, through March 1994. (5%)

	Sega CD	LaserActive	3DO	CD-I
Software	★★★★	★★	★★★★	★★★★
Full-motion Video	★★	★★★★	★★★★	★★★★
Value	★★★★	★★	★★★★	★★★★
Graphics	★★★★	★★	★★★★	★★★★
Controls	★★★★	★★	★★	★★
Peripherals	★★★★	★★	★★	★★

Zero Texas, and Tomcat Alley are all-video titles. None are perfect, and the spin is too frequently on action and shoot-'em-ups, but the library is big and varied. Prizefighter's first-person perspective and Raging Bull-style black-and-white cinematography, for instance, create an experience far superior to cartoonish video games.

Sega CD punches through the lines on other fronts, as well. Nonvideo graphics are crisp and colorful, if not blindingly fast; its stock controller is more than adequate; and thanks to the Genesis, it has an extensive list of third-party controllers and other add-ons.

If I wanted a machine for '94, this is the box I'd buy.

**Sega CD** (Sega of America; 800-872-7342; \$229)

**Sega Genesis** (Sega of America; 800-872-7342; \$99)

**Ground Zero Texas** (Sony Image Soft; 310-

449-2320; \$9.95)

**Mad Dog McCree** (American Laser Games; 800-863-4263; \$59.95)

**Prizefighter** (Sega of America; 800-872-7342; \$59.99)

**Sonic CD** (Sega of America; 800-872-7342; 49.99)

**Tomcat Alley** (Sega of America; 800-872-7342; \$59.99)

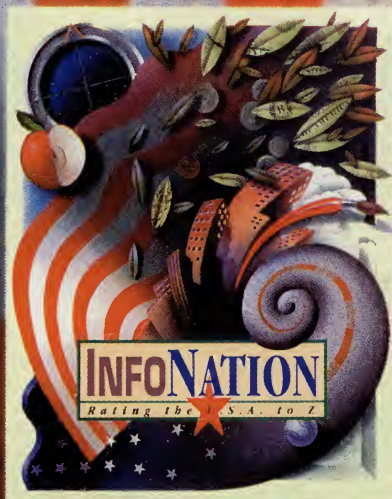
**Hits:** Cheapest complete CD box price; plays Genesis cartridges; software list moving beyond kids' market

**Misses:** Low-res, jerky video; no movies

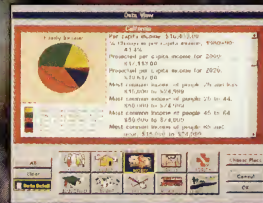
**Gotta-Get Titles:** Sonic CD, Prizefighter, Ground Zero Texas

**Army Most Like:** The now-defunct Red Army; technologically out of date, but with enough numbers to overwhelm opponents.

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# 3DO

**N**ow that you can get a 3DO Interactive Multiplayer for less than \$500, buying this 32-bit CD game machine makes more sense.

And with new players coming from AT&T, Goldstar, and Sanyo, expect prices to go lower by the end of the year. Even with a more reasonable price tag, 3DO still isn't the killer box its backers claim, but it's a better bet than when it hit stores last fall.

It looks like a small, black waffle iron, but Panasonic's original Multiplayer comes loaded for bear. Its trio of processors—one 32-bit RISC chip and a couple of graphics animation processors—handle graphics manipulations, while a double-speed CD-ROM drive spins the discs.

The raw power difference between the 3DO and the Sega CD and the CD-i is about the same as the difference between the Red Baron's WWI Fokker triplane and Tom Cruise's F-15. They both fly, but one screams. A video-intensive game on the 3DO, like *Mad Dog McCree*, looks like TV, with much higher resolution, increased colors, and smoother motion than anything on the Sega CD. Even with all this horsepower, though, you'll still see irritating delays in



**The explosive Total Eclipse tops the skimpy list of 3DO software titles.**

after its debut, the 3DO claimed only a couple dozen titles at best, and none are revolutionary in scope or game play. Most are recycled, although often improved, hits from other platforms, like John Madden Football from Electronic Arts or Psygnosis' *Lemmings*. Most of the rest are beefed up and graphically snappy Sega-style video games. Drop Crystal Dynamics' *Total Eclipse* in that pigeonhole. Assuming 3DO and its partners hang in, the software situation will get better. The library may soon come close to doubling to around 45 entries, and several intriguing 3DO-only titles, including *The Horde* from Crystal Dynamics and EA's *Twisted: The Game Show*, have recently hit the shelves.

Other future elements of 3DO in general and the Panasonic in particular increase

some software as the machine draws data off the CD.

Like any new box, the most significant flaw of Panasonic's Multiplayer is a weak library of games. Nearly six months

this box's appeal. By midsummer, when the MPEG add-on is slated for release, you'll be able to watch CD movies on the machine. Just as important, you may even be able to start connecting the player to your phone line for group gaming and online entertainment.

Although it still lacks software ammunition, 3DO looks a lot better at \$500.

3DO wants you now, but I'd wait until '95—when the price should drop again—before enlisting in the 3DO corps.

**Hits:** Techno-sharp, with plenty of processing power; sub-\$500 price; lots of goodies down the road

**Misses:** Software list still spotty; lousy controller

**Gotta-Get Titles:** *Total Eclipse*, *The Horde*

**Army Most Like:** U.S. Army; technologically flashy, but could still use some cost-cutting

**3DO Interactive Multiplayer** (Panasonic; 800-732-5336; \$499.95)

**John Madden Football** (Electronic Arts; 800-245-4525; \$59.95)

**Lemmings** (Psygnosis; 800-438-7794; price not available)

**Mad Dog McCree** (American Laser Games; 800-863-4263; \$59.95)

**The Horde** (Crystal Dynamics; 415-473-3434; \$59.95)

**Total Eclipse** (Crystal Dynamics; 415-473-3434; \$59.99)

**Twisted: The Game Show** (Electronic Arts; 800-245-4525, \$59.95)

## Computers Are Cool, Too

**S**et-top game boxes aren't your only source of CD-ROM entertainment. When equipped with a double-speed CD-ROM drive and a decent sound board, your desktop PC or Macintosh can be an attractive—if not exactly relaxing—place to play.

In some ways, the PC and Mac make even better playgrounds than their less expensive siblings in the den. That's primarily because their playlist is so large (PCs and Macs play both CDs and floppy disks) and more oriented towards grown-ups. Action games may be scarce on the desktop, but sophisticated adventure, role-playing, and strategy games are more numerous than kids in an arcade. Games like *Journeyman Project* and *Critical Path*—may never migrate to the

set-top machines. To play these, you'll have to go to the desktop.

But even the fastest, most cutting-edge desktop computers can't keep up with the graphics performance of game machines like Panasonic's 3DO box. PCs and Macs simply can't match the 3DO when it comes to the number of displayed colors and the speed with which they move graphical elements. Part of this is due to the 32-bit processors that some current and most future set-top boxes contain. But most of the fault lies with the PC's lack of a graphics co-processor.

Nor do the PC and Mac have a clear-cut path to full-motion video. Though many CD games provide limited video (and you can add MPEG capability to your PC), the impetus for full-motion—movies on CD—is missing on the desktop. Who wants to watch *The Unforgiven* in front of the computer when they can crash on the couch instead?—Gregg Keizer



# CD-i

**C**onsidered dead and buried only a year ago, Philips's CD-i is climbing back out of the grave. An improved library of games and other titles, price cuts (a basic unit now costs less than \$500), a heavy rotation of "infomercial" television spots, and the introduc-

The 7th Guest, Microcosm, and Mad Dog McCree that have moved from other machines to CD-i. Others are still available only on this platform. These include Voyeur—a titillating PG-13-style, all-video mystery—and International Tennis Open, a well-rounded, addicting sports simulation. There's even a bit of the offbeat on CD-i, from the adult-oriented Playboy's Complete Massage to a healthy dose of reference and kids' stuff. CD-i's software collection is the most wide-ranging, if not the most consistent, among the machines, with a slant toward grown-ups, not 12-year-olds with an itch for digital martial arts. Miracles do happen; CD-i

may win the war.

But you should wave its flag (and put it under the TV) only if you can get the whole family involved.

**CD-i (Philips Consumer Electronics; 800-824-2567; \$499)**

**Digital Video Module (Philips Consumer Electronics; 800-824-2567; \$249)**

**International Tennis Open (Philips Games; 800-824-2567; \$49.98)**

**Mad Dog McCree (Philips Games; 800-824-2567; not yet priced)**

**Microcosm (Psygnosis; 800-438-7794; price not available)**

**Playboy's Complete Massage (Philips Home Entertainment; 800-824-2567; \$24.98)**

**The 7th Guest (Philips Games; 800-824-2567; \$59.98)**

**Titanic (Philips Home Entertainment; 800-824-2567; not yet priced)**

**Voyeur (Philips Games; 800-824-2567; \$49.98)**

**Hits:** Snappy software; lots of titles for kids; Philips doesn't look like it's going to give up on the box

**Misses:** Old technology with little room to grow; pricey play when you add in the Digital Video module

**Gotta-Get Titles:** Voyeur, Titanic, International Tennis Open

**Army Most Like:** Texans at the Alamo; surrounded on all sides by fierce competitors, but ready to go down fighting



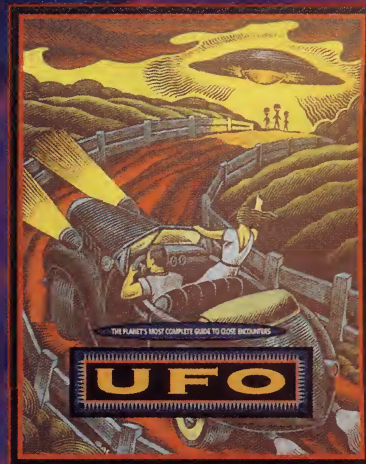
You're a clandestine cameraman in *Voyeur*, a titillating mystery for the CD-i platform.

tion of an add-on that lets it play CD-based movies and full-motion interactive games bring the promise of a full-scale resurrection.

Closely resembling a VCR in size and shape, CD-i is the oldest and one of the least impressive technically of the CD machines. Like the Sega CD, CD-i uses a 16-bit processor and a single-speed CD-ROM drive; unlike the Sega set-top box, though, CD-i can display a quarter-million colors at a slightly higher resolution, making its video-thick games look a lot more like broadcast TV. Add the \$249 MPEG Digital Video module, and the picture quality approaches that of VHS tape.

Although the initial wave of games for the CD-i was way below par—some were less impressive than ancient titles running on obsolete computers—the newest generation of games shows some spark. You'll find familiar names among the list—games like

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# LaserActive

**T**oasters make toast and coffee pots brew the black stuff, but I've never seen a machine do both.

Pioneer should have stepped into the kitchen for a quick lesson on building a game machine before it sent its \$799 LaserActive into battle. This amalgam of analog and digital technology is a laser disc player at heart that *does* play games. Lots of games. But how the LaserActive plays those games, and at what cost, makes it as much of a Rube Goldberg design as that mythical espresso-with-a-side-of-wheat-toast machine.

The boxy LaserActive is bigger than most of today's VCRs and considerably larger than any other CD game player. That's necessary, of course, for the machine to play the 12-inch laser discs popular among videophiles. The LaserActive also plays 8-inch laser discs, 5-inch audio CDs, 5-inch CDVs, and 3-inch audio CDs.

The LaserActive's prowess at playing games isn't evident when running its proprietary titles—there are only a handful



**I Will**, a detective story set in England, is one of the few LaserActive titles available.

available. To experience that, you'll need to fill the open bay at the front with one of two \$499 add-on modules: one that turns the LaserActive into a *very* expensive Sega Genesis/Sega CD combo, or another that transforms it into a Turbo Grafx video game machine. With the Sega module in place, for instance, you can slap a Genesis cartridge into a slot, or drop a Sega CD disc onto the LaserActive's tray. The Turbo Grafx module is virtually worthless, since the cartridge/CD selection for that machine is mainly staffed with ancient titles. Naturally, these Genesis and Sega CD (and Turbo Grafx) games play

just as if they were popped into their native machine. No better, no worse.

What the LaserActive does well is show movies. Unlike digital video on 5-inch CDs, which are only now being released, movies on 12-inch laser discs are easy to find. Although laser discs use analog video rather than digital, the picture is sharper than what you'd see on an MPEG-format CD (the video's not compressed, as it is on a 5-inch movie CD). It's even sharper than VHS tape or cable TV. And with its digital audio output, the swelling sound-

track of a *Spartacus* is outstanding.

But the wisdom of spending close to \$1,300 for a combination laser-disc player and Sega Genesis/Sega CD game machine is, to put it mildly, questionable. For lots less—say, \$700—you can buy all the components separately. Space saving is a good idea, but not *that* good. Forget this one.

**Hits:** Plays laser discs for fine movie watching; mutates into Sega Genesis/Sega CD game machine with optional module

**Misses:** Expensive; tiny proprietary title list  
**Gotta-Get Titles:** None

**Army Most Like:** The Netherlands'; flexible, well-disciplined, uses other countries' equipment—but more a showpiece than a military with might

**LaserActive** (Pioneer; 800-421-1404; \$799)

**Sega Module** (Pioneer; 800-421-1404; \$499)

**Turbo Grafx Module** (Pioneer; 800-421-1404; \$499)

## Games Ain't Enough

**C**an you say information superhighway? The set-top box makers sure can.

Several of these CD machines want to leap beyond games to become the ultimate purveyor of home entertainment. Not satisfied with taking a turn at disc-based fun, they're promising the moon (with a bit of pie in the sky thrown in for good measure), hoping you'll buy today, then sit tight for tomorrow. Here's just some of the poop:

■ CD-i and 3DO are capable of playing MPEG-format movies on CD. The LaserActive plays feature films on 12-inch laser discs.

■ 3DO and Sega CD owners will be able to connect, via phone lines, to online entertainment arenas such as the Imagination Network for group gaming, as well as link individuals for head-to-head play.

■ By the end of the year, Sega CD users will be able to subscribe to the Sega Channel, a cable TV service that lets you download and play games and previews.

■ 3DO has made a lot of noise about wanting to be part of the interactive television controller market (as has everyone from Sony to Microsoft). Don't expect anything soon, though.

■ CD-i and 3DO handle PhotoCD-formatted discs, so you can skip through a digital photo album of your snapshots.

—Gregg Keizer



# Amiga CD<sup>32</sup>

Commodore's Amiga CD<sup>32</sup> once seemed likely to join the fray, but serious financial problems recently forced the company into an unconditional surrender.

Although the \$399 box carved out some territory in Europe, the company collapsed before the CD<sup>32</sup> established a beachhead in America. A few loyalists hope that another company will pick up the CD<sup>32</sup>. Even if that happens, though, CD<sup>32</sup> would find itself riding into an impossible situation.

That's a shame, since the CD<sup>32</sup>'s specs were impressive, its software list long, and its price competitive. The CD<sup>32</sup> was a 32-bit game box with a double-speed CD-ROM drive and enough graphics power to blow away the Sega CD. It could double as a CD movie machine

with an optional \$250 MPEG cartridge and could play several CD formats—CD<sup>32</sup>, Amiga, and CDTV, as well as audio discs.

The box's construction, however, was a tad shabby: the controller was too light and the box was flimsy.

Ultimately, though, it was the shakiness of Commodore's finances that made the CD<sup>32</sup> the first casualty of the war over the CD-based interactive entertainment. With this much heavy artillery aimed at the limited space on your TV set, the only question now is who will be next?

**Army Most Like:** Custer's 7th Cavalry; a lot of bravado, but doomed.

**Amiga CD<sup>32</sup>** (Commodore; 610-431-9100; \$399)

## In the Year 2525...

Okay, it won't take *that* long for Nintendo to get its act together, but the next generation of game machines doesn't seem to be exactly jumping out of the labs, either. Here's a quick rundown of some of the boxes you'll see...someday.

**Project Reality.** The code name for Nintendo's 64-bit video game system, scheduled for a 1995 introduction. Project Reality will use a RISC-based processor developed by graphics workstation wonder Silicon Graphics, run from megacartridges holding 100 megabits of data (a megabit is a unit of measure for game cartridges; CDs hold about 4,800 megabits), and cost (so says Nintendo) less than \$250.

**Saturn.** The code name for Sega's next machine. With dual 32-bit processors, Saturn will play CDs (and probably cartridges, too) and should run in the \$500 range. More of a 3DO-killer than anything else, Saturn should show up in 1995. It may be later that year rather than sooner, for Sega certainly wants to milk the Genesis and Sega CD markets as long as it can. The introduction of a \$150 32-bit add-on to the Genesis this fall is obviously a measure that will allow it (and the Sega CD) to run Saturn-style software. This strategy—intended to keep as many gamers as possible from fleeing to 3DO boxes—is a good sign that Saturn is still a ways off.

**Jaguar.** No code this time, but a real name for a real machine. Atari's \$250 cartridge-based 64-bit machine is slated to receive a CD-ROM add-on sometime soon. For now it's strictly a fast, flashy version of the Genesis and Super Nintendo. But with slim software pickings, reported reliability problems, and Atari's penchant for missing the marketing boat, it's got an outside shot at best.

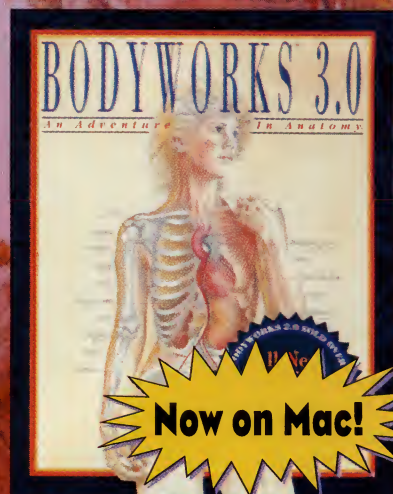
**PSX.** Sony is expected to introduce this 32-bit machine next year for about \$600. It will first be shipped in Japan, then arrive on these shores later in the year. Sony claims that the PSX will offer three-dimensional graphics and stereo sound, run at an incredibly fast 500 MIPS, and include a modem for online service access. On the software side, Sony has reportedly lined up arcade giant Capcom for support.

**NEC.** Reportedly working on a 32-bit CD-ROM game machine that will be launched by the end of the year. NEC claims the unit will be as powerful as Sega's 32-bit Saturn and contain an advanced decompression engine to support full-screen, full-motion video. Price: around \$250.

—Gregg Keizer

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# Playing in the MUD

The beginner's guide to down-and-dirty role-playing fun on the Internet.

**R**EMEMBER WHEN DUNGEONS AND DRAGONS STORMED THE COUNTRY? Back in those pre-PC days, hairy college students in dingy dorm rooms tossed away untold hours playing the freeform roleplaying game. Led by a “dungeon master,” players assumed medieval or magical roles and then rolled dice or drew cards to live out the situations and battles the dungeon master proposed. It was all fantasy and no tech.

Now, D&D has gone online. MUDs—short for Multi-User Dungeons—are one of the most popular forms of entertainment on the Internet. In fact, some popular MUDs are crowded with more than 100 players in a game at one time.

Today's MUDs are generally run by “gods,” also known as “imps” (implementors) or “admins” (administrators). As in the old D&D games, the object is most often to gain experience, gold, and equipment by defeating various monsters. Other games, however, consist mainly of socializing and role playing, with no goal other than those you set for your character. And within these two broad categories, there are several types of MUDs, with dozens of variations each.


You can't exactly win playing in the MUD, but you can't exactly lose, either. The point, if there is one, is simply to participate in creating a virtual world. The more involved you get, the more you'll get out of the MUD experience.

By Andy Eddy and Mitch Burton

*Illustrations By Russ Willms*

*This article was adapted from Andy Eddy's book Internet After Hours: Your Guide to Finding Fun, Games, and Just Plain Weirdness on the Internet, (1994, Prima Publishing, Rocklin, CA, \$19.95)*





For a general, very basic idea of how to play, take a look at a well-run, popular MUD called SneezyMUD. When you first connect, the game asks for some basic information about you and your character:

>>Type in a name for your character.

I'll name my character Drazak.

>>Did I get that right, Drazak (Y/N)? y

>>New character.

>>

>>Give me a password for Drazak:

To protect yourself, never reuse a password from one MUD or one system to another. Hackers like MUDs, too.

Of course, the character-creation process varies from one MUD to the next. Some MUDs begin with a series of simple rooms to get you started and let you establish your character as you go along, while others use elaborate menus that let you select a variety of characteristics. Whatever the method, character creation is pretty self-explanatory on most MUDs.

On SneezyMUD, the process goes something like this:

>>Now you get to choose your alignment. This is very important.

>>Your alignment will not change as easily as you are used to.

>>If you would like an overview of how alignment works on this MUD type '?'

>>To go back to the previous menu type '/'.

>>Otherwise, choose your alignment:

>>

>>1) Good 2) Evil 3) Neutral

>>

>>Alignment :

Drazak is an evil-sounding name, so I'll pick 2.

>>Ok, you will be evil aligned! \*grin\*

>>

>>Now you pick your sex.

>>To go back to the previous menu type '/'.

>>What is your sex (M)ale/(F)emale/(O)ther?

I'll go ahead and make Drazak male, but there are no rules that say your character has to be the same gender that you are.

>>Now you get to pick your handedness. The hand you pick as your primary hand will be the strongest, and be able to

>>do more things than your secondary hand.

>>

>>To go back a menu type '/'.

>>

>>Pick your primary hand: 1) Right 2) Left

Just for the heck of it, I'll make Drazak left-handed. On this MUD, handedness is more of a cosmetic difference than a game-affecting one.

>>Now you get to customize your stats.

>>To go back to the previous menu, type '/'.

>>

>>Commands: +-(S)tr +-(I)nt  
+-(W)is +-(D)ex +-(C)on  
(Q)uit (H)elp

>>Your Stats are: 13 13 13  
13 13

Each stat has a different effect on your character, but you have only so many points to go around. A high str (strength) stat lets you carry more, a high int (intelligence) stat lets you perfect skills with fewer practice sessions, a high wis (wisdom) quotient gives you more practice sessions per level, a high dex (dexterity) level helps you get hit less often, and a high con (constitution) rating raises your resistance to attack. On some MUDs, a

high strength also lets you inflict more damage per hit.

I'll type -1 to decrease Drazak's intelligence stat by one. I'll do this two more times and then decrease his wisdom three times to free up some points that I can add to other stats.

>>Commands: +-(S)tr +-(I)nt +-(W)is +-(D)ex +-(C)on  
(Q)uit (H)elp

>>Your Stats are: 13 10 10 13 13

>>

>>You have 6 free points.

>>

>>Change what stat?

>>

>>> +s

I'll put the extra points into Drazak's strength and constitution. Drazak has gone from being rather average to being a strong and healthy—though somewhat dimwitted—bad guy. These are all the modifications I'll make for now, so I'll type "q" to quit and move on.

Drazak has gone  
from being rather  
average to being a  
strong and healthy—  
though somewhat  
dimwitted—bad guy.



>>Please pick one of the following races.

>>

>>An X in front of the selection means that you can pick this race.

>>If there is no X, for some reason you can't choose the race.

>>To see why you can't choose a selection, choose it and you will be

>>given an error message telling you why you cannot select the race.

>>

>>[X] 1. Human [X] 2. Gnome

>>[X] 3. Elf [X] 4. Ogre

>>[X] 5. Dwarf [X] 6. Hobbit

>>

>>There are advantages and disadvantages to each choice.

>>Type '?' to see a help file telling you these advantages and disadvantages.

>>Type, '/' to go back a menu to redo things.

>>Race :4

Drazak sounds like a good name for an Ogre, so I picked 4.

>>Please pick one of the following combinations for your class.

>>An X in front of the selection means that you can pick this class.

>>If there is no X, for some reason you can't choose the class(es).

>>To see why you can't choose a selection, choose it and you will be

>>given an error message telling you why you cannot select the class(es).

>>

>>[X] 1. Warrior [ ] A. Antipaladin

>>[ ] 2. Cleric [ ] B. Paladin

>>[ ] 3. Magic-user [X] C. Monk

>>[ ] 4. Thief [X] D. Ranger

>>[ ] 5. Warrior/Thief [ ] E. Mage/Cleric

>>[ ] 6. Warrior/Cleric [ ] F. Warrior/Cleric/Thief

>>[ ] 7. Mage/Thief [ ] G. Mage/Cleric/Thief

>>[ ] 8. Mage/Warrior [ ] H. Mage/Cleric/Warrior

## Getting on the Internet

If you're a college student or an engineer, playing in Internet MUDs is easy. Your school or corporation probably provides free Internet access.

But if you're part of the general public, things can be more difficult. Fortunately, the commercial online networks are clamoring to make Internet services available to their PC- and Macintosh-based customers. CompuServe, GEnie, and even Prodigy have opened their e-mail services to incoming and outgoing Internet mail, but this level of access is not good enough to play in an Internet-based MUD.

The people at America Online promise to deliver extended Internet services by the year's end. In addition to Internet mail, AOL will offer USENET newsgroups for bulletin board-like messaging/debating/flaming, file-transfer protocol (FTP) services to upload and download files from all around the globe, and maybe even Telnet access for direct access to other computers—which is what you need to play a MUD. (America Online; 800-827-6364)

Until then, the sole commercial service to provide "full featured" Internet access is Delphi Internet Services. Delphi has always been a friendly, small-scale service, but its Internet links are making it the virtual place to be. Delphi offers full FTP, Telnet, USENET, Gopher, IRC, and other Internet services from its Internet special-interest group (GO INTERNET). Delphi's 20/20 plan offers 20 hours monthly on the service for \$20, with full Internet access only \$3 extra per month. (Delphi Internet Services; 800-695-4005 for information, or dial 1-800-695-4002 with your modem, hit <Return> a couple of times, then enter the password "E2" for a free 5-hour trial)

If you don't want to go through a commercial service, check out one of the growing number of low-cost public-access Internet services. Unlike the more established commercial systems, these networks generally offer their services in specific metropolitan areas. In some cases, the access is unlimited, as opposed to the cost-per-hour rate charged by commercial networks. The trade-off is usually cryptic or restrictive commands.


Examples of these public-access services include San Jose-based Netcom, Panix in New York, World in Boston, and the Well in San Francisco. Netcom, the current king of Internet access, began in the Bay Area but has since expanded into Southern California, Portland, Washington D.C., Boston, Seattle, Atlanta, Dallas, Chicago, Denver, and New York. Netcom offers unlimited Internet access with a local dial-up number for high-speed modems (14,400 bps) for as little as \$17.50 a month. (Netcom; 800-501-8649 outside San Jose, 408-554-8649 in San Jose)

So-called freenets are another option, and more of them are cropping up all the time. These free services are generally limited to specific metropolitan areas and often operate on computers donated by colleges. In the Denver area, for example, Nyx is offered by University of Denver, and the Cleveland Freenet is a service of Case Western Reserve University and Community Telecomputing Laboratory. The only hassle with these systems is that to enforce security you must validate your application with notarized documents or through personal-check donations.

—Andy Eddy







```

>>[ ] 9. Cleric/Thief [ ] I. Mage/Thief/Warrior
>>
>>There are advantages and disadvantages to each
choice.
>>Type '?' to see a help file telling you these
advantages and disadvantages.
>>Type, '/' to go back a menu to redo things.
>>
>>Class :

```

Since I am new and have a limited amount of skills, only a few choices are open to me at this point. And because I'm just starting out, I'll select 1 for Warrior. Warriors have lots of hit points, which means I'll live longer and can dish out large amounts of damage. Warrior is a good choice for new MUDers.

Now it's time to enter Drazak into the MUD. Almost all MUDs begin with a log-on message like the one below.

```

>>
>>  _____
>> |               |
>> |  Welcome to Sneezymud 3.0  |
>> |               |
>> |  Your options:           |
>> | 1) Leave Sneezymud      |
>> | 2) Enter the game       |
>> | 3) Enter your character's |
>> |    description         |
>> | 4) Read the background  |
>> |    story of Sneezymud   |
>> | 5) Change your character's |
>> |    password            |
>> | 6) Delete your character |
>> |_____|
>>
>>Choose your fate : 1

```

If I had second thoughts about my character, this screen would let me delete him, but right now we're ready to play...

```

>>Center Square
>> You are in the center of a large town. An east-
west road meets with a
>>north-south road here. There is an ornate foun-
tain here with a large statue of
>>a gallant warrior atop the fountain.
>>You can see exits to the north, east, south, and
west.
>>A large statue stands here.
>>A large, gray fountain sits here bubbling water.
>>A large rat has climbed out of the sewers in

```

```

search of a meal.
>>A male citizen stands here.
>>A small streetsweeper stands here, cleaning the
roads.
>>An old, broken down horse stands here.

```

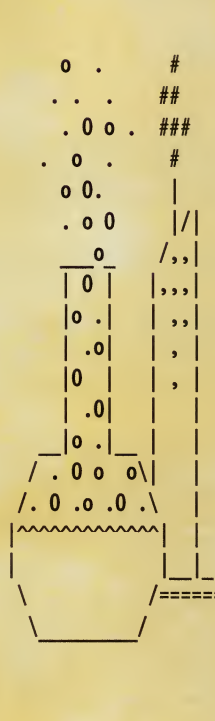
What we have here is the starting room. The first line is the name of the room, Center Square, followed by a description that varies in length, depending on the details of your specific location. Next comes the "exits" line, which specifies the directions you can travel. After the exits line is a description of what's in the room—here, there's a statue, a fountain, a rat, a citizen, a street-sweeper, and a horse.

As in most text adventures, what you carry determines what you can do, so I'll begin by checking what's in my inventory.

```

>> > inventory
>>You are carrying:
>>A small training dagger (brand
new)
>>A book titled 'The Sneezymud new
player's guide'
>>A standard ration [2]

```



The first line here is the MUD prompt, where I enter commands. The following lines tell me what I have on my person.

It's important to keep track of what you carry, and also how much. If I were to find, say, a magical sword, I might not be able to carry it if I were loaded with too much other equipment. So for now, I'll wield the dagger and drop the book. Note that the "[2]" after the standard ration means that I have two of them.

```

>> > drop guide
>>You drop a book titled 'The
Sneezymud new player's guide'.

```

Unlike when you play by yourself against the computer, things you do affect the "world" when others wander through the same rooms. Now the book is lying on the ground, and anyone who happens to walk by can pick it up.

```

>> > wield dagger
>>You hold a small training dagger in your left hand.

```

I can use the command "equipment" to see what I'm wearing, holding, and wielding. You'll likely pop in and out of the MUD over a period of time, so it's important to keep yourself updated on your various stats. For now, though, I know that I'm wielding only a training dagger. I won't get far with that, so I need to visit the donation room



to stock up on some more effective gear. Many MUDs have a donation room somewhere, a place where more experienced players drop off extra equipment to aid new players in getting started. Ask around to find out where it is. On SneezyMUD, the donation room is located three west, five south, and one west from the center square.

To move, simply type the name of the direction in which you wish to go. (Remember, the valid exits are listed on the exits line, just below the room description.)

>> > w

>>King's Way

>> This wide street is clean and well traveled. To the north you see a large

>>church, and to the south is a popular tavern.

>>You can see exits to the east, south, and west.

>>The corpse of Rider is lying here.

Oops! Looks like someone died here. I could take whatever is on the corpse, but looting corpses will anger other players. If you should want to look in the room or area again, simply type "look."

>> > w

>>King's Way

>> This is a wide and clean street which slopes gently downwards as it runs to

>>the east. To the north is a large church.

>>You can see exits to the east and west.

>>An emissary from the halfling kingdom walks purposefully through town.

>>Dixi shouts, "Can I group up with some people? I need exp! level 4"

This time, in the last line someone is shouting a message to send it to all the players currently online. On SneezyMUD, you can't shout until you gain enough experience points to reach Level 2 status, but there are other MUDs that let you shout immediately on joining the game. Shouting is a good way to communicate with many other players at once, especially useful when traveling in groups.

I'll move on to the donation room.

>> > s

>>Branish Way

>> You are on the north part of Branish Way. King's Way is to the north of here

>>and there are shops to the east and west. South leads down to more shops.

>>You can see exits to the north, east, south, and west.

>> > s

>>Branish Way

>> This is near the heart of the busy marketplace of Grimhaven. Market square

>>is directly south of you and the armory is to your west.

>>You can see exits to the north, south, and west.

>> > s

>>Market Square

>> This is the center of Grimhaven's Trading District. There are all sorts of

>>shops in all directions. It seems as if you could get anything you wanted

>>here...for a price.

>>You can see exits to the north, east, south, and west.

>> > s

>>Branish Way

>> Immediately to your west is one of Grimhaven's weaponsmiths and from the east

>>the smell of fine food emanates from Froddar's. Market Square is to the north.

>>You can see exits to the north, east, south, and west.

>>An old, broken down horse stands here.

>> > s

>>Dead End

>> You are at the end of this very busy shopping street. To the west is the

>>donation area and to the east you hear the sound of puppies barking.

>>You can see exits to the north, east, and west.

>>A small, skinny dog stands here.

>> > w

>>Surplus

>> This room is for the surplus items you would like to give to charity. If

>>something can help, please take it and use it. If you take from here, return

>>the favor when you can leave something for those less fortunate.

>>You see an exit east.

>>A shield of hard leather is here.

>>A leather training helm is here. [18]

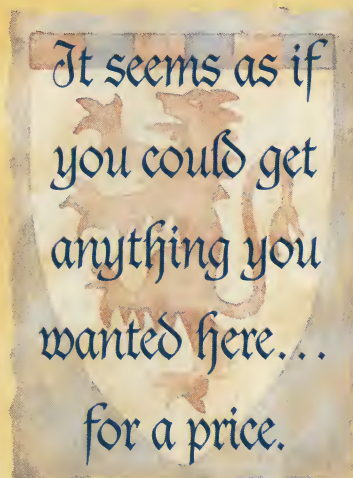
>>A large, weathered tome entitled 'The SneezyMUD new player's guide' lies here. [6]

>>A leather training shield is here. [3]


>>A soft leather training belt is here. [15]

>>A leather training jacket is here. [10]

>>A soft leather boot is here. [21]







>>A pair of soft leather pants is here.

I'll go ahead and get some useful equipment.

>> > get helm

>>You get a leather training helm.

>> > wear helm

>>A leather training helm: You wear a leather training helm on your head.

>> > get boot

>>You get a soft leather boot.

>> > wear boot

>>A soft leather boot: You wear a soft leather boot on your left foot.

>> > !

>>A soft leather boot: You wear a soft leather boot on your right foot.

Note that the second time, I typed "!" not "wear boot." The "!" command tells the MUD to re-execute the previous command.

>> > get belt

>>You get a leather training belt.

>> > wear belt

>>A leather training belt: You wear a leather training belt around

>>your waist.

>> > get pants

>>You get a pair of soft leather pants.

>> > wear pants

>>A pair of soft leather pants:

You wear a pair of soft leather pants on >>your legs.

Now that I've got some armor, it's time to look for something to attack.

>> > e

>>Dead End

>> You are at the end of this very busy shopping street. To the west is the

>>donation area and to the east you hear the sound of puppies barking.

>>You can see exits to the north, east, and west.

>>A small, skinny dog stands here.

This one looks wimpy enough, and I need to exercise my evil. Plus, I need the experience points.

>> > kill dog

>>You miss a small dog.

>>You miss a small dog.

>>A small dog bites your left foot very hard.

>>You pierce a small dog's front left leg lightly with your dagger.

>>A small dog bites your body very hard.

>>You pierce a small dog's body incredibly well with your dagger.

On this particular MUD, once you render something helpless, you stop fighting it. I'll go ahead and finish off the little mutt, though.

>> > kill dog

>>You pierce a small dog's body into a bloody pulp with your dagger.

>>A small dog is dead! R.I.P.

Now that the poor virtual pup is dead, I can take whatever it was carrying.

>> > get all from corpse

>>You do not see anything in the corpse of a small dog.

Even though the worthless mongrel didn't have any material possessions, killing it gave me experience points. You accumulate experience points to gain a level, which gets you more hit points, skills, and practice sessions. It's called building up your character. I'll check and see how I'm doing with the "score" command.

>> > score

>>You are 17 years old. It's

your birthday today.

>>You have 88.0% hit points and 100.0% mana. You are totally rested.

>>You have scored 14 exp, and have 0 gold coins.

>>You are of evil alignment, and have a 75.00 percent alignment ranking.

>>Your levels: 0/0/1/0

>>This ranks you as: Drazak the Ogre Swordpupil

>>You have been playing for 0 days and 0 hours.

>>You are standing.

>>You are in normal attack mode.

The second line gives me percentages for my hit points (hit points are lost when you're struck in combat) and mana (which are lost when spells are cast). The third line tells me how much experience and gold I have. The next line tells me about my alignment. As you kill good or evil things, you tend to be more evil or good, respectively. The fifth line tells me what level I am at. The different numbers represent different classes, but since I'm just a warrior only one of the numbers is





greater than zero. The sixth line indicates my title.

The ninth line tells me my attack mode. On SneezyMUD, "offensive" attack mode causes you to hit your opponent more often, at the expense of getting hit more often yourself. "Defensive" mode means you get hit less often, but you inflict less damage, too. "Normal" is balanced between these two.

Here's a chance to talk with another person in the MUD!

```
>> > say Hello!  
>>You say, "Hello!"  
>>Lorac says, "Yo..."  
>>Lorac leaves east.
```

>>Lorac has arrived from the west.

Looks like he wasn't in the mood for a chat. Oh,

## Netrek: The Ultimate in Internet Entertainment

**N**etrek, an Internet-based 16-player real-time space-war simulation with a "Star Trek" theme, is changing the way we play online computer games.

Created in 1989 by Kevin Smith and Scott Silvey at UC Berkeley, Netrek may be the first truly electronic sport—your eight-person team battles for control of the galaxy. To be successful you need solid teamwork overall, not just good individual play. You also need to be prepared to die—often. Even good players will easily lose 100 ships per hour in heavy combat.

When a game starts, the two-dimensional galaxy of 40 planets is divided equally between four species: the Federation, the Romulans, the Klingons, and the Orions. Of these, only two are involved in any one game—the 20 planets belonging to the species not involved in the game remain neutral.

To win, you must conquer all 10 of your opponent's planets. Each planet starts with 30 armies, a number that grows gradually as the game progresses. You can bomb a planet to destroy most of its defenses, but you must beam down your own armies to destroy the final five defending armies. Each army you beam down destroys one defending army on the planet.

You use phasers and torpedoes to kill enemy ships, which allows you to beam up your troops to attack other planets. Each of the six types of ships can sustain a certain amount of damage, carry a certain amount of fuel, and employ cloaking devices, tractor/pressor beams, and weapons.

Game play is fast-paced and bloody. The large ships hang out near the front lines where their firepower does the most good. The smaller ships raid behind enemy lines, collect friendly armies, or chase enemy scouts.

Team members communicate via a message board. (Sorry, no communicators!) When an army carrier wants to take a planet, he calls for help. His teammates, if they are alert, rush to the planet he wants to conquer and kill any enemies there.

While each side starts with the same number of planets, the planets aren't identical—each has a certain set of resources. Ships repair damage faster when orbiting a repair planet, and they regain fuel faster orbiting a fuel planet. Also, each side has a couple of strategic agricultural (AGRI) planets, which make armies more quickly than other planets do.

The feel of the game is somewhat similar to basketball—with 16 players, 4 baskets, 2 or 3 balls, and no fouls. The left mouse button fires torpedoes at the cursor, the middle mouse button fires phasers at the cursor, and the right mouse button points your ship in the direction of the cursor. Use a number key to choose your warp speed or the @ key for max warp. Fuel planets have a picture of a fuel can on them, repair planets sport a wrench, and planets with more than four armies bear a stick-figure guy.

The controls are difficult to master, so you should expect to lose a lot of fights until you're used to them. You also should expect to occasionally be called a "twink" or some similar insult until you learn enough about the game to be able to contribute to your team. Don't let it discourage you—it's just court talk.

The only real problem with Netrek is finding a way to play. The best way requires a Unix workstation directly connected to the Internet—that means a university or corporate account will come in handy. With a little work, high-end Macintosh and Amiga users with client-server software can play if they are connected to a Unix host. PC users are out of luck, at least for now.

—Andy Eddy and Tom Holub



On a Unix workstation Netrek delivers graphical "Star Trek" action.





well. There is also a command called "tell," which works like this:

```
>> > tell lorac bye
>>You tell Lorac,
    "bye"
>>Lorac tells you,
    "see ya"
```

On this MUD, there are two ways to quit. One is the plain old "quit" command, which leaves all your possessions behind. The other is the "rent" command, which lets you keep your equipment. In order to rent, you must be in a special reception room. The exact name of the room varies and they can be hard to find. On some MUDs, rent is free. On Sneezymud, you get rent credit. This means that you can rent a certain number of coins' worth of items free, but you have to pay any costs above the credit. The amount you get free rises as you gain levels.

Of course, the particular commands described here work only on certain types of MUDs, and Sneezymud is but one of literally hundreds. Still, the basic ideas remain the same no matter which particular MUD you are playing.

Just remember that there's more to MUDs than just entering commands and wandering through the landscape. While the computer spits out automated characters, the best part is meeting up with characters backed by a "real person."

Person-to-person interaction extends from simple conversation to full-out combat and mayhem. You can fight anything that you want to kill, but there may be good reasons to talk first. If you do get into a fight, try everything from stabbing and kicking to casting spells.

Just don't forget that MUDs demand "in char-

## Staying Clean In a MUD

MUDs, like the rest of the Internet, operate under a set of unwritten rules. So we wrote down a few:


- ❖ Don't go around spewing insults at people. It'll make you unpopular.
- ❖ If someone insults you, try not to flame back. Ignore them or politely inform an imp or god about the problem.
- ❖ On combat MUDs, don't go around stealing other people's kills. If someone is fighting a monster, don't just jump in to finish it off and take the reward.
- ❖ On role-playing MUDs, don't act out of character. If everyone else is role-playing, don't say, "Hey! Great Super Bowl this year, eh?"
- ❖ If someone asks you to stop doing something for a reason, stop doing it. The MUD is there for you, but not *just* for you.

—Andy Eddy and Mitch Burton

MUDs. Don't get discouraged, just talk to someone else.

Passing conversations crop up all the time, but to deal with a MUD's many challenges you may want to team up with another character or group of characters that you meet. Or you can choose to go stag and discover the world on your own.

Finally, keep in mind that MUDs aren't linear like the computerized text adventures of the 1980s,

although the two types of games may look alike at first glance. MUDs don't lock you into a set path or series of actions like these older games. And as you move up the MUD food chain by gaining experience points, new skills, and advanced powers, you can even add to the MUD's world and alter how others see you by programming elaborate descriptions. It's architecture, MUD-style. 

Andy Eddy is a senior editor at GamePro magazine. Mitch Burton spends most of his time programming, participating in MUDs, and playing card games on the Internet Relay Chat.

## This MUD's For You

Finding a MUD in the vastness of the Internet isn't always easy. Finding a MUD that fits your particular notions of fun can be even harder. To help you get started, here are the Internet addresses of four popular, well-organized MUDs that you might want to consider.

**Name:** Sneezymud

**Address:** [sprinkle.cray.com](http://sprinkle.cray.com) 7900 or 128.162.84.19 7900

**Description:** The MUD featured in this article.

**Name:** Mystic Adventure MUD

**Address:** [miniac.etu.gel.ulaval.ca](http://miniac.etu.gel.ulaval.ca) 4000 or 132.203.14.100 4000

**Description:** A Medieval hack 'n slash MUD with lots of areas, classes, and races.

**Name:** PernMUSH

**Address:** [cesium.clock.or](http://cesium.clock.or) 4201 or 130.43.2.43 4201

**Description:** Roleplaying based on the Pern novels.


**Name:** TRON

**Address:** [polaris.king.ac.uk](http://polaris.king.ac.uk) 4000 or 141.241.84.65 500

**Description:** The object of this MUD is to kill all the other characters in an all-out war.

—Andy Eddy and Mitch Burton





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phone, tons of Windows sound and productivity software and 7 of the hottest CD titles including Macromedia Action 2.5™, Indiana Jones and Comanche CD.\*

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**Capture a  
chess program  
that's fit  
for a king.**

A large, dark green chess rook stands prominently on the right side of a black and white checkered chessboard. Its arm is raised, holding a small, broken piece of a chess piece. In the lower-left foreground, a smaller, brown chess king piece stands on a white square. The background is a solid black.

# **Don't Get Rooked!**





**By Barry Brenesal**

UNLESS YOU'RE GARRY KASPAROV, odds are your personal computer plays a better game of chess than you do. Today's chess programs for the PC will kick your less-than-grand-master-rated butt before you can say Ruy Lopez.

But it's still fun to play against the computer. You can dumb down or crank up your machine to match your skill level. Use chess programs to learn the basics or to hone already sharp skills, or add multimedia flashes to a formerly quiet and cerebral contest.

The question is, what kind of game are you looking for? Some chess titles are so easy to use that even beginners can start playing right away. Others look so good they put even the fanciest chess sets to shame. Some move so fast you barely have time to think. While still others play a brand of chess impressive enough to dig a permanent furrow in your brow.

To help you out, we picked winners in six categories: Best Overall, Best Animation, Best Chess Engine, Best Instructor, Best Graphics, and Most Configurable. Four titles—Chessmaster 4000 Turbo, Kasparov's Gambit, Socrates 3.0, and Battle Chess 4000—divided up the honors.

**ILLUSTRATION BY STEVE POLLOCK**



## Chessmaster 4000 Turbo

*Winner: Best Overall, Best Graphics, Most Configurable*

**T**his popular chess series pulled away from the pack in 1991 with the release of Chessmaster 3000. The latest version, Windows-based Chessmaster 4000 Turbo, is a knockout. No other chess software goes so far out of its way to meet your needs, whatever they are.

You can choose among five different kinds of move notations. Go with one of 40 predefined computer opponents, or build one from a set of 24 parameters. There are eleven different chess sets, four 2-D boards and seven 3-D boards—or create your own board, setting its size, colors, and viewing angle.

Chessmaster 4000 Turbo also has eight modules you can load and resize in any combination, including Chess Clocks, Capture List, Notes, and even a Chat window to exchange insults with a

remote player. Eight preconfigured layouts run the gamut from MicroChess, a tiny board with a stacked menu bar, to the War Room, a large 2-D board with all the bells and whistles.

Ever looked for a chess program that offers analysis and advice like a chess master—without making you feel 3 feet tall in the process? Then check out Chessmaster 4000 Turbo's Natural Language Advice module. It tells you in plain English what to move next and, more important, why. The advice doesn't take long because this program is fast: the "Turbo" in the title refers to a new 32-bit processing engine that accesses extended memory for extra speed. Given a few minutes, Chessmaster 4000 Turbo can analyze an entire game. (The Software Toolworks; 800-234-3088; Windows, \$59.95)



The powerful and well-balanced Chessmaster 4000 Turbo lets you play with a series of finely rendered 3-D chess sets.

## Kasparov's Gambit

*Winner: Best Instructor*

**G**arry Kasparov has the highest chess ranking ever recorded. So a computerized chess program that carries his name is bound to attract a lot of attention.

But his involvement in Kasparov's Gambit

## GRAND MASTER MAC

Given the relatively small size of the Macintosh market, it's no surprise that Mac chess software development lags behind the DOS/Windows world. But Mac devotees can turn to three leading programs: Battle Chess, CheckMate, and especially Chessmaster 3000.



Beneath its bare-bones interface, CheckMate plays a mean game of chess.

it's a great way to hook beginners. (MacPlay; 800-736-5738; Mac, \$29.95; CD for Mac, \$64.95)

MacPlay's more serious entry, CheckMate, features much stronger game play—enough to keep even advanced club players hopping. The bare-bones interface lets you control the computer's style of play, and you can even tell your Mac to play a particular line from its large opening library. (MacPlay; 800-736-5738; Mac, \$54.95)

As we see it, the all-around Macintosh chess champion remains Software Toolworks' recently updated Chessmaster 3000. It's still a revision behind Chessmaster 4000 Turbo on the PC, but this strong and versatile package offers a variety of attractive playing pieces and finely tuned control over your computer opponent. Choose preset styles such as Pawn-Grabber or Chessmaster, or build a personality from a list



Chessmaster 3000 is top dog in the world of Macintosh chess.



Battle Chess Enhanced uses CD-ROM technology to deliver stunning color animations.

of adjustable attributes. Chessmaster's excellent Tutor mode doesn't just suggest your next move; it describes the probable line of play resulting from that move, plus its effect on your position and material. (The Software Toolworks; 800-234-3088; Mac, \$49.95)

Aside from some shareware games available online, that pretty much covers the field for Mac chess software. Electronic Arts says it will port Kasparov's Gambit to the Mac, but don't look for that until next year.

—Cameron Crotty



is limited. Ask for a hint during the game, and Kasparov offers video advice. Unfortunately, the advice isn't very useful, because his comments are so terse—typically he tells you no more than “Move your pawn.” That's not teaching; that's dictation.

Kasparov's Gambit adopts a more hands-on approach in its Famous Games module. Here you can walk through 500 classic chess games at your own pace using the Arrow keys. Pieces automatically slide across the board, while the program displays Kasparov's written commentary.

Novice players won't get much from Kasparov's remarks. He discusses alternate lines of attack and defense in the abbreviated syntax of chess notation. (Electronic Arts missed an opportunity when it didn't use the second onscreen chessboard to accompany the remarks with visual illustrations.) But intermediate players might gain a lot from Kasparov's professional insights.

Despite Kasparov's presence, this chess program is surprisingly lackluster. There's no modem or LAN support. At lower resolutions you can size screen modules, but you can't move them. Kasparov's Gambit offers you a variety of preconfigured opponents, but its devise-your-own-opponent option includes only five customizable parameters. And who ever heard of a chess program without a Takeback feature?

A mixed review, then, for Kasparov's Gambit. The actual gaming engine is excellent, and the online annotations from the reigning World Chess Champion will improve any intermediate player's game. But despite Kasparov's video commentary, Gambit lacks many of the options it needs to qualify as a full-featured chess program. (Electronic Arts; 800-245-4525; DOS, \$59.95)



If you need help with a move, Kasparov's Gambit offers brief video tips from the world's best player.

## RANKING THE CHESS GAMES

GAME	EASE OF USE	STRENGTH	CONFIGURABILITY	GRAPHICS	TUTORIAL
<b>Chessmaster 4000 Turbo</b>	★★★★	★★★★	★★★★	★★★★	—
<b>Kasparov's Gambit</b>	★★★	★★★★	★★★	★★★★	★★★★
<b>Socrates 3.0</b>	★★★★	★★★★	★★★	★★★	—
<b>Battle Chess 4000</b>	★★★★	★★★	★★★	★★★★	—

### Socrates 3.0 Winner: Best Chess Engine

Its simple VGA, 16-color mode won't win any awards for visuals. There are no online tutorials. So what has Socrates got? Simply the best chess engine around.

Evidence? Item: Socrates is currently three-time defending Harvard Cup Chess Champion—winner of the only major international competition that pits human against computerized chess players. Item: In 1992, an earlier version of Socrates scored 3 wins and 2 losses in the Harvard Cup, giving it a lifetime record of 8 for 15 against the human grand masters. No, Socrates' looks won't kill. But its performance will.

Additional options in Socrates are slim but well chosen. You can switch sides in a game, or play against another human while Socrates just logs the moves. You can set how long Socrates thinks about a move, and how many moves ahead it looks.

You also can pose chess problems for Socrates to solve, make it take back a move, and force it to move at your convenience. If you want to experience absolutely the highest level of competition, Socrates is the program for you. (Heuristic Software; 800-955-4634; DOS, \$99.95)



Socrates 3.0 expends its efforts trying to win, not trying to look pretty.

### Battle Chess 4000 Winner: Best Animation

Got a kid or a younger sibling you want to teach to play the most ancient of mind games? Animated chess programs can help younger players see the violent clash of egos behind the hushed demeanors of chess players. Watching animated capture sequences keeps their interest while you demonstrate the basic moves. And frankly, it's great fun to watch—at least for a while.

Battle Chess 4000's claymation animation and deftly timed humor are excellent, as are the Super VGA graphics in 640-by-480 mode. There are even satires on contemporary space movies, including *Star Wars* and *2001: A Space Odyssey*. Sooner or later, of course, the appeal of the animation palls. There are only a limited number of possible sequences, and you already know who wins.

But when you tire of watching the cartoons, turn them off and watch Battle Chess 4000's superior playing strength—rated at master level—and its wide selection of options. These features set it apart from other animated chess programs such as The Software Toolworks' Star



# Sega CD Product of the Year



More than 30 new Sega CD titles were launched last year. *AH-3 Thunderstrike* blew them all away to capture the 1993 Sega CD Product of the Year award. Enlist now and see for yourself what all the thunder is about.

## Best Sega CD Shooter



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*Die Hard Game Fan, October 1993.*



## Editors Choice Award



"Thunderstrike has got to be seen to be believed! Excellent scrolling, sound effects, weapons and superb gameplay will set the standards..."

*Electronic Gaming Monthly, November 1993.*



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Wars Chess, Spectrum HoloByte's sophomoric National Lampoon's Chess Maniac 5 Billion and 1, and Interplay's own earlier Battle Chess.

Battle Chess 4000 also offers an attractive, nonanimated 2-D mode that supports modem play. New players will like the Rewind option, which restarts a finished game and lets you step through again, one move at a time, at your own pace. As a fun way to begin playing chess, Battle Chess 4000 should make a positive impression in any century. (Interplay Productions; 714-553-6655; DOS; SVGA version, \$59.95; VGA version, \$49.95)

### It's Your Move

By a long shot, Chessmaster 4000 Turbo is the single best chess program you can buy. It's strong, fast, configurable, and visually attractive. If there's only one computer chess game in your future, make it Chessmaster 4000 Turbo.



Fanciful pieces and animated battles make Battle Chess 4000 appealing to beginners.

But Chessmaster 4000 Turbo is Windows-based. DOS users must choose between Kasparov's Gambit and Socrates. Kasparov's Gambit has the edge in graphics, tutorials, and configurable options, while Socrates' performance is slightly stronger. Both are solid players, but Kasparov's Gambit is better for all but the most skilled players. Kids, meanwhile, will

appreciate the animated action in Battle Chess 4000.

And if you don't mind waiting awhile, there are some hot new tiles in the works. Look for a much-enhanced multimedia version of Chessmaster 4000 on CD-ROM later this summer. Interplay, meanwhile, is working with the U.S. Chess Federation to create USCF CheckMate Pro. This new game will actually provide a USCF-certified rating for your performance in a lengthy series of online "tests."

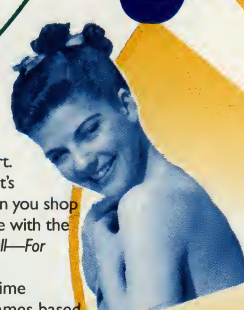
But even if your favorite chess program won't turn you into a grand master, it can still improve your game and be a lot of fun. And after all, that's the point, isn't it?

Barry Brenesal has been reviewing computer software and hardware for more than a decade. He is currently working on books about memory management and travel in Bulgaria.

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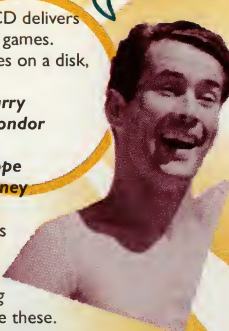
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**The**  
Multimaniac  
turns his new  
daughter into a  
Raphael cherub.

# how my PC







# morphed the minimaniac

**W**hen you've been around this game as long as the Multimaniac has, you don't need a bloodhound

to sniff out the truly important new technolo-

gies. Believe you me, the real winners jump

right up and slap you in the face with that sweet smell of success. So you'll know what I mean when I say I've never been slapped quite so hard, or been quite so overwhelmed by the pungent aroma of a new technology, as I have been with morphing software.

*Morphing*, of course, is that new-fangled graphics special effect that animates the transformation of one image into another. You see it a lot in television commercials these days, turning cars into jaguars and toads into turnips. Morphing was originally developed for multimillion-dollar supercomputers, but the technology soon migrated to workstations and has now arrived on PCs and Macs.

Back when it was the private property of Tinseltown's special-effects geniuses, morphing first drew oohs and ahs in *The Abyss*, though it couldn't save the 1989 flick from sinking fast. Since then, morphing has helped create such unforgettable characters as the guy with the square head in the shaving-cream commercial and the guy who sleeps in a bucket on "Deep Space Nine." But, of course, morphing's most amazing efforts came in several noble, if ultimately unsuccessful, cinematic attempts to transform Arnold Schwarzenegger into something resembling a human being.

Perhaps you detect a note of sarcasm here. I've been told recently that I am far too prone to that failing. May-

be it's lack of sleep. I've recently become host to a brand-new permanent houseguest, a warm, squirmy 9-pound beauty who doesn't quite understand why 3 a.m. isn't a perfect time to play. (Not that I can really blame her—it took me about 35 years to figure that one out myself.) So maybe sleep deprivation has left me irritable.

Or maybe it's morphing.

Not that I have anything against the technology itself. Morphed animations can be neat—at least the first few times you see them. After that, they begin to resemble the classic *Frampton Comes Alive* album from the seventies. After a period of intense fascination, one day the whole world wakes up and realizes that the object of its attention is simply not all that interesting.

Plus, the name bothers me. Admit it, *morphing* sounds like something that Mork from Ork does after too much beer. What's worse, there's been a sudden profusion of morphing programs at my local software store. I don't quite get the point, because after all, morphing is just one technique, not a complete art form. Buying software that does nothing but morph makes about as much sense as watching a baseball game where all the players bunt, or playing a concerto consisting entirely of B-flats.

But what really bugs me about morphing software is that I couldn't resist it. I knew it was silly, but there I was, plunking down good money for a morphing program to run under Windows—PhotoMorph, to be exact, which everyone I talked to told me was the best morphing program for Windows. And not only that, but once I got the program

**by Paul Bonner**

ILLUSTRATION BY R. M. KATO



home, I couldn't stop playing with it. Worse yet, I loved every minute of it.

The final insult is that morphing exposes all the weaknesses of character that made me the Multimaniac to begin with: I just can't resist cool technology, no matter how useless, empty, or stupid it is. What a pitiful creature this Multimaniac be.

## Reality Bites

I've begun to drag my whole family down to my level. I'm embarrassed to admit that I've fallen victim to the most mundane of all clichés: I morphed my daughter into an angel.

I know that sounds bad. Like the Multimaniac is on a serious parent trip. Venturing into obsession even. Certainly suffering from excessive cuteness. But believe me, I didn't plan it that way. It just sort of happened.

Oh, I'll admit that I wanted to morph little Leida into something. But what's wrong with that? I've got lots of raw material—baby pictures—to work with. But

I swear, I really wanted to morph her into a toaster, or a Miata, or maybe onto Mount Rushmore—not into anything as horribly clichéd as an angel.

But as they say, reality

The basic trouble is that even with the best morphing software—and PhotoMorph is pretty darn good—creating impossible transitions isn't easy. If you're going to morph one image into another and make the results look convinc-

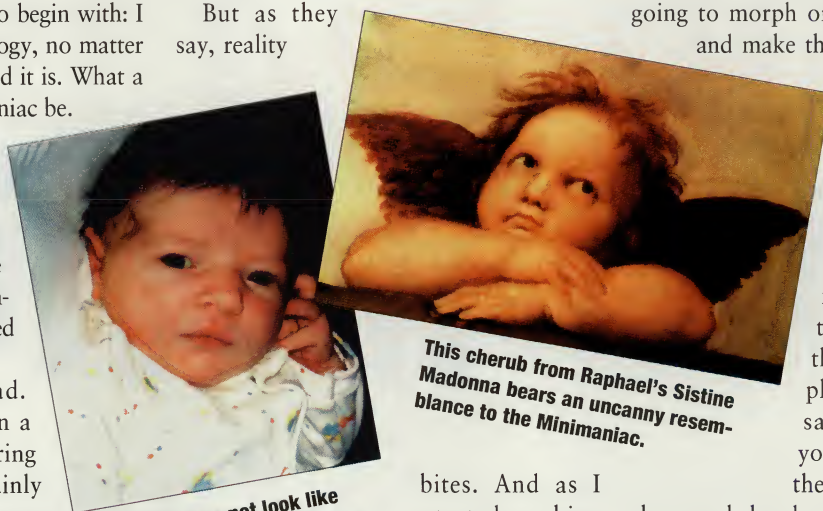
ing, it helps if the two images you start with are at least fairly similar.

When you morph two head shots of people, for instance, it helps if both heads are about the same size, looking in the same direction, and photographed from the same angle. You want your images to be about the same size, color, and

shape, and placed on similar backgrounds.

This isn't to say that you can't morph radically different images. In fact, PhotoMorph includes a rather amazing demonstration of morphing a newborn chick into a frog. It's just harder. Too hard for the Multimaniac.

And the fact is that daddy's little girl



*Little Leida may not look like an angel to you—but morphing can fix that.*

*This cherub from Raphael's Sistine Madonna bears an uncanny resemblance to the Minimaniac.*

bites. And as I started working with the morphing elements of

PhotoMorph (which, to its credit, also includes basic image-editing tools, and other special effects such as transitions and warping), I began to see some awfully sharp teeth.

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doesn't really bear much resemblance to a toaster or a Miata. I can't say that she truly resembles your average angel, either—especially not when she's bawling away in the middle of the night—but I did happen to have a photo on hand which bore a strong resemblance to a little cherub from Raphael's *Sistine Madonna* (oil/canvas, c. 1530).

## Angel Baby

My toaster plans became toast, and I got to work scanning both images into my PC, loading them into PhotoMorph, and doing a little editing to increase the similarities between the two images. PhotoMorph's editing tools let me rotate and mirror and crop Leida's picture so that she was more or less oriented at the same angle as Raphael's cherub.

Then I began to set up the morphing process, picking out the morphing points that the software uses to transform one image into another. For instance, you might place one point on the left eyelid of one face, and the corresponding point on the other face's left eyelid, to tell the program how to link the two images.

Placing points was simple—PhotoMorph

displayed the images side by side, so all I had to do was click on one image to set a point there, then move the point indicator that appeared automatically in the other image. I clicked on the proper spot in that image to tell the software to link the two points. I probably could have gotten away with placing just a half dozen points or so, but the more points you place, the more control you have over the morphing process, so I ended up creating a couple of dozen morphing-point pairs.

Once that was done, I was ready to launch the morphing process itself. PhotoMorph can produce either an AVI format movie, consisting of 30, 60, or however many frames you indicate that the morphing process should take, or it can generate preview frames of any point in

the morphing process, and save those frames to disk in a variety of popular formats.

I wanted to watch the movie, so I clicked the Create Animation button and sat back as PhotoMorph churned out the Multimaniac's morphed masterpiece. When it was done, I used PhotoMorph's built-in AVI player to view my creation—and was blown away with the result. Over the course of 30 frames, Leida's face was magically transformed into the radiant image of Raphael's angel. It was a breathtaking show of technology at work, and I was overwhelmed at how



Halfway from baby to angel, this image shows a little of both.

easy PhotoMorph had made the process.

But then reality bit again. Leida's mother walked into the room, took a quick glance at the animation, and said, "That's really creepy." And she was right. (North Coast Software; 603-664-7871; Windows, \$149.95)



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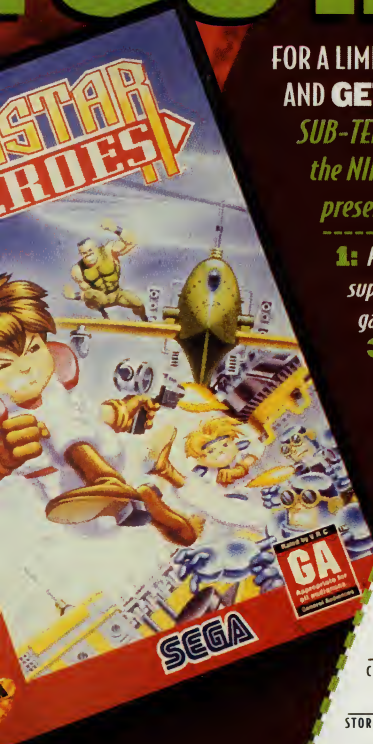
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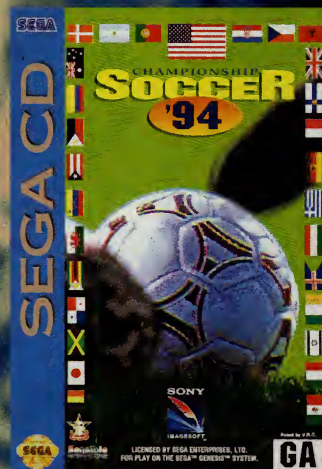
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# Insider Interview:

## Bruce Carver, Access Software

**A**ccess Software founder and CEO Bruce Carver has grown his 1982 startup into to a \$20 million-plus company. While Access's most popular product is the Links 386 Pro golf simulation, it's betting big bucks on the recently released *Under a Killing Moon*, a cutting-edge interactive movie adventure for PCs. E2 technical editor Christopher Lindquist talked to Carver about the market, the hype, and the secret to his success.



**E2:** You're stepping to the forefront of interactive movies with *Under a Killing Moon*, but there are other companies, such as Electronic Arts and Trilobyte, that are working on similar titles. Can the market support a dozen of these types of games—which carry huge development budgets—or are we going to see a shakeout?

**Carver:** Our budget isn't as big as EA's and the like. If you had to spend \$1 million or \$2 million on a product, I don't know how you would be able to justify it in today's market. I don't think that you can sell that many of these.

**E2:** Computer games are picking up a lot of steam these days. Even the general press is getting interested. Is there anything about this new attention that scares you?

**Carver:** When things are going well, people want to be part of the action. There are a lot of people doing shovelware, and that's bad for the industry. If we just talked a guy into buying a computer that he's been afraid of all his life, he wants to make it a great experience for him and his family. If he's unlucky enough to buy two or three bad pieces of software and has a terrible experience, the computer gets shut down and he doesn't use it anymore.

But if you get him the best-quality software, then the guy has a great experience, and pretty soon he's thinking computers are the greatest thing in the world. The downside is that the more lousy stuff there is, the more opportunity there is to trash the market.

**E2:** Are you looking into the software rental market?

**Carver:** We're in with Blockbuster, and I think that has potential. I also think you have to be very careful. People are used to having a VCR, and with a movie, you plug

## Scouting Report Gaming News You Can Use

The 16-channel, 32-voice soundtrack is the wave of the future, and games that support this technology will splash on shore by the end of the year, or so says **Creative Labs**. Creative is supplying the necessary technology to play back this high-tech sound in its **AWE 32** wavetable sound board. **Creative** also announced a deal with **3DO** to produce a PC card that will run 3DO titles. The card is slated for a scanner release, but pricing has not yet been determined, according to a 3DO spokesman.

**Access Software's Links** golf games just keep getting better. Links 486CD is due to hit store shelves later this year. (The golf sim suffered some delays while Access concentrated



Access Software's *Under a Killing Moon*

on pushing its **Under a Killing Moon** interactive movie out the door.) The new Links adds even higher-resolution graphics and more animations to this PC golf simulation standard. Access is also looking to add to the resort flavor of its Links course add-ons by providing looks at hotels, restaurants, and other attractions surrounding the fairways.

Sega's virtual-reality headgear, which has already been delayed several times, has suffered some more delays. Seems the design guys got worried that headgear-blinded kids might trip and hurt themselves. The new version reportedly uses a semi-transparent visor to prevent accidents.

If you haven't gone CD-ROM yet, start saving your pennies. Several major game developers, including **Interplay** and **Spectrum Holobyte**, are looking to break your floppy-disk habit by moving to CD-ROM-only releases over the next few months. While they may still sell some smaller titles on magnetic media, the big games will be optical disc only.

If you're looking for a quick way to jump into CD-ROM, keep an eye out for **Sirius Pub-**



it in and you say go. You can fast forward, you can rewind, or you can stop it. That's about it. There's not a big learning curve.

In a Sega or Nintendo environment, you mash that cartridge in there and away you go. But there's so much more involved [in a PC]. That complexity can just turn people off. They take it home, it doesn't work, and they just bring it back.

**E2:** What's the secret to Access' success?

**Carver:** I think there are over 1 million owners of Links 386 Pro. In our registered

database there are about 200,000 people, and we've sold about 400,000 copies. But I know there are at least 1.6 million people who are playing that game, because I know there's a 4-to-1 [ratio of pirated] copies out there.

What that does though, is it gives me a lot of power. If a person can call me who didn't even buy it from me and I treat him well, it buys me mind share. It buys me loyalty. I feel a kinship with those people. It's great to see something that you love be loved by other people.

## DATES TO REMEMBER

PC game vendors are going full-bore to get a slew of new products out over the next few months. Keep an eye out for these games now in development.

### AUGUST

Aces of the Deep, Dynamix (DOS)  
Fifth Fleet, Avalon Hill (DOS)  
Lode Runner, Dynamix (DOS)  
MetalTech, Dynamix (DOS)

### SEPTEMBER

Blackbeard, Avalon Hill (DOS)  
World at War: Stalingrad, Avalon Hill (DOS)

### OCTOBER

Charles Barkley: Shut Up and Jam, Accolade (DOS)  
Doom II, Good Times Software (DOS, MAC)  
Inferno, Ocean of America (DOS)  
Magic Carpet, Bullfrog (DOS)



Take control of a German U-boat and terrorize Allied ships in Dynamix's **Aces of the Deep**.

### NOVEMBER

Hardball IV, Accolade (DOS)  
Jack Nicklaus IV, Accolade (DOS)

## Game Ratings Key

Games are rated from 1 to 5 in four categories. A rating of 1 means it couldn't be much worse, and a 5 means it doesn't get any better.

**Game Play:** A high score says this game will keep you coming back for more.

**Getting Started:** The game loses points if you'll spend more time reading manuals and learning commands than playing.

**Graphics:** Image isn't everything, but hot graphics can make even mediocre games worth a second look.

**Value:** The higher this rating, the better you can feel about getting out your wallet.



If you see our bug, you might notice them in the game, too.

Look here for hints and tips to help you get started or keep you going in the tough spots.



Sometimes our reviewers find "undocumented" tricks that help tame killer titles.

This icon identifies games that have special requirements, such as needing more than 4MB of RAM.



**ishing's 5 ft. 10 Pak.** This strip of CDs includes *Doom* from Id Software and King's Quest V from Sierra On-Line, plus several other games and multimedia titles—all for about \$30! It's a good deal by any measure.



Id Software's *Doom*

The "tech-heads to the stars" down at **Rocket Science Games** are getting closer to releasing their much-rumored Sega CD/PC CD-ROM

titles—**Loadstar**, **Cadillacs and Dinosaurs**, and **Darkride**. The list of Rocket Scientists reads like a Who's Who of the technology entertainment field, including veterans of such top-grossing films like *Terminator 2* and *Jurassic Park*, so we could be in for some truly incredible games.

**Reel Magic** MPEG card maker **Sigma Designs** has announced plans for a PC add-in card that will run **Atari Jaguar** CD-ROM titles. The card, due out by Christmas, combines Sigma's MPEG technology with Atari's 3-D graphics.

**Advanced Gravis** has been running hot with a recently upgraded **UltraSound** card that supports digital recording plus a pressure sensitive keyboard and a **Personal Piano** software system that includes **Musicware's Piano** software designed to teach old and new alike

how to tickle the electronic ivories. But the company's most exciting news may be an advanced, programmable, multibutton joystick now on the drawing board. Advanced Gravis showed the new device at April's Computer Game Developer's Conference. The slick asymmetric 'stick is slated for a pre-holiday release.

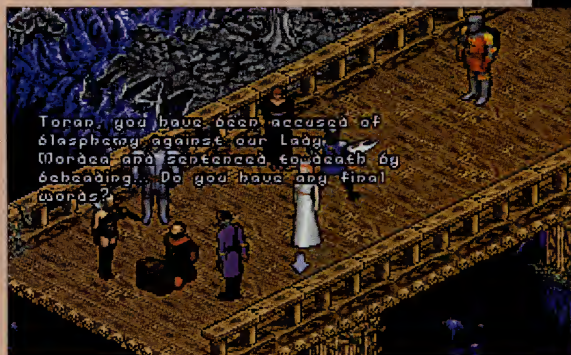
Something OS/2 is good for in the home: **IBM** has been demonstrating lately that it's much praised but little used operating system runs MCGA-mode graphics three to four times faster than under DOS. Numerous current and forthcoming games—including **Origin's Pagan** and **Pacific Strike** and **Software Toolworks' Mega Race**—still use the low res, 320 x 200, 256-color MCGA mode for speed and compatibility. The point? You can run them much faster on systems equipped with OS/2 instead DOS.



# Ultima VIII: Pagan

By Peter Olafson

**T**he eighth installment in the long-running Ultima series takes us on a completely unexpected role-playing journey. This time around you're not just on the outside looking in on that helmet-headed hero known as the Avatar. This time you begin to get under his skin.



Tough town.

As in Ultima VII, Part II, you're not in Britannia, the L-shaped continent that played host to every Ultima up through VII. Rather, you're a stranger in a strange land called Pagan, with all the possibilities for unfettered invention that suggests. You've been unceremoniously deposited outside the walled coastal city of Tenebrae by the Guardian—your nemesis in the two Ultima VIIs and Ultima Underworld II—and rescued by a good-hearted fisherman, at whose beachfront campfire the game begins.

You quickly discover that all is not well here. Indeed, things are rather gruesomely helter-skelter by Britannian standards: There's a beheading coming off at the end of the pier to the northwest, and a pile of bones at the base of the city walls to the north and east. The guards point pikes first and ask questions later.



Up country, along the mountain range north of Tenebrae. Where thar be mountains, thar be dungeons...

In fact, most of the people don't volunteer information easily. When they do speak, their words are often clouded with suspicion, and those that talk more freely generally have an evil story or two to tell.

The beauty of the Ultimas has always been some mixture of fragrant detail and globe-girdling breadth. The world is now smaller in terms of square miles, but far greater in size to



You make quite a splash upon your arrival in the strange land of Pagan.

the eye—everything is roughly two and a half times larger than in the Ultima VIIs. As a result, the details are laid on much more thickly, down



The palace lies dead ahead, and the rich and poor sections of town to the right and left, respectively.





**Good luck getting to know the executioner. It's like talking to a brick wall, only bricks talk back more.**

to the food on plates, ornamental metalwork, hairstyles, and fires crackling on hearths.

The game's compass is no longer oriented along north-south and east-west axes but canted at a 45-degree angle running northeast-southwest or northwest-southeast. This may initially seem like window dressing until you realize that it also reveals more of the Avatar. He is no longer simply a head and shoulders but an action-figure-size character. He's a tad anonymous under that trash can of a helmet, but he moves with a smoothness and nuance that can only have been drawn from a live model. You could swear that this was a rotoscoped character filmed and transplanted seamlessly onto disk.



Pagan is altogether a subtler creature than any of its predecessors. It's not immediately clear where things are headed; there's no murder or array of missing possessions to galvanize you to action as in the Ultima VIIs. You can still wander through front doors unchallenged—something I wish they'd get around to changing—but the characters may now ask you what the devil you think you're doing. Thankfully, the game text

is largely free of the preachy speeches and world-order-as-algebra equations that have infected every Ultima up through VII Part II.

But there are carryovers from the previous versions. The mouse remains the engine for movement, and the point-and-click inventory and conversation systems used in the Ultima VIIs are still in force. Your character still has stats, and one of your intermediate objectives is to enhance them through experience.



**You awaken beside this fire as the game begins.**

Ultima VIII: Pagan feels personal. There's a new physicality to the game. Perhaps it has something to do with the size of the characters, the closeness of the view, and the synchronization of digitized sound to animated action. But when the Avatar strikes a blow or is struck in return, it seems to reverberate through the machine and mouse, up your arm, and into your heart. And it's in your heart that Ultima VIII will stay. (Origin Systems; 800-245-4525, DOS, \$79.95; \$24.95 for optional speech pack)

**You arrive in the world of Pagan without any belongings, but you should find a bedroll and a bite to eat beside the fisherman's campfire. There's also a dagger in a jewelry box in one of the barrels near the stairs to the pier. (Watch it with those mushrooms, though.)** **Don't mince words with the palace guards. This is not fair Britannia, your business is not your own, and if they're pushed far enough they'll knock the stuffing out of you.** **Read every book and document you can lay hands on. There's some very goofy stuff in several of them. In particular, have a look in Seneshal's writing desk.** **Let's just say Tenebrae isn't about to get most-favored-nation trade status. Pay a visit to the palace cellar to see why. (The stairs are in a room at the rear of the barracks.)**

**PSS!**

GAME PLAY:	★★★★★
GETTING STARTED:	★★★★
GRAPHICS:	★★★★★
VALUE:	★★★★
<b>The most up-close and personal Ultima yet, with a more vital lead character and a more facile touch in the telling.</b>	



# Beat the House

By Michael S. Lasky

I've played every game of chance that Las Vegas offers, so it's difficult to imagine a computer game accurately simulating the casino experience. But Beat the House from Spirit of Discovery makes me feel like I'm halfway to Nevada.

From the tacky lounge music to the odds at the tables, Beat the House captures the essence of casino action. The integrated package comes with five popular games: blackjack, craps, roulette, various slot machines, and an assortment of video poker machines.



Round and round it goes, where it stops, who cares? Roulette is the weakest link in this otherwise solid casino simulation.



The video poker screens come closest to simulating their casino cousins.



The only live hand is yours; the others are computer generated. But you do determine how many players are at the table.

A 160-page instruction book not only covers the computer games but also describes a method for winning in real casinos. Written by gambling expert Avery Cardoza, the book offers valuable advice on when, what, and how to bet in every situation.

Armed with these tips, you're ready to Beat the House. The main menu is a casino floor shown from a cleverly depicted ceiling view, the kind real casinos use to spy on suspected cheaters. Each gaming area is clearly marked, and a mouse click takes you to your game of choice.

Once you're on the floor, Beat the House's look and feel draw you in to its

virtual world. The slot machines sound like the real thing, from the clang of the coins to the clickety-clack spinning of the wheel. The video poker simulation closely mimics the actual machines by treating the entire monitor as if it were the poker screen. Likewise, blackjack offers realism with quick deals using your choice of one to six decks.

Of all the games, roulette probably fares the worst. There's no way to depict a roulette wheel on a computer screen with any verisimilitude, and placing bets is a cumbersome, multistep process. Rolling the dice in craps involves a similar reality check, but keeping the voice track on during that game helped me understand the table action and kept me involved.

Unfortunately, all the games are strictly solo. No matter how many names you register at the Front Desk when you begin, only one will be selected at random for you to play; the other players are computer controlled.

And while game play is straightforward, configuration leaves something to be desired. Strangely enough, the com-

mands to kill the music, voice track, and auto-coach screens don't appear at the Front Desk but are buried in the Tutor menu. Likewise, settings are good for only the current session and must be reset every time you play.

But for actual casino gaming action, Beat the House does exceedingly well, at least with blackjack, video poker, and craps. Its true-to-life depictions of the games made me feel like I was really at the casino. The only difference is that when I look in my wallet, the money is still there. (Spirit of Discovery; 619-929-2010; DOS, \$49.95)

GAME PLAY:



GETTING STARTED:



GRAPHICS:



VALUE:



A truly worthwhile casino simulation that offers real-world betting odds, noteworthy graphic depictions, and an easy guide to learning how to beat the odds.



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## The Horde

By Rusel DeMaria

**T**he Horde is being touted by Crystal Dynamics as the first of the next generation of electronic games, perhaps because it uses real, full-screen video with real actors. Whether it deserves all the hype isn't really important. What matters is whether it's a good game. And the answer to that is yes.

You play Chauncey, a lowly servant elevated to minor land baron by virtue of saving the king's life. Numerous full-motion-video cut scenes establish the plot, and these scenes are almost invariably funny, quirky, and well-acted. In fact Kirk Cameron, the best-known of the actors, is perhaps the least enjoyable, while Michael Gregory, who plays the evil High Chancellor, is marvelous in the role.

The interactive portion of the game features good, solid computer graphics, but nothing like the video quality of the cut scenes. Here, The Horde relies on involving action and strategy, and

Chauncey has created a "killing zone" with archers and knights, but he's in trouble.



**PSST!** **Getting started:** Plant lots of trees and harvest them when they mature. **Remember, you can place cows on your land, but gather them up again before you have to move to the next region.** **Grow as many trees in Alburga as you can. You'll get a special gift from the Tree Dryad.** **There are ways to use Le Bombe and a Haunch together.** **Watch the frogs in the swamp. Dig where they dive.**



Help comes from Roscoe, the fire-breathing dragon.

to succeed at the game, you have to figure out a few key elements of each of five terrains. In addition, there are hidden items and other tricky secrets to keep you guessing.

Action takes place in two phases. In the first phase, you must prepare for the upcoming hordling invasion. Did I mention the hordlings? They eat anything—and I do mean anything. They also come in several varieties, and some can present significant challenges. You may also choose to plant and harvest trees to raise gold to pay your taxes. Speaking of

gold, you'll also want to place cows on your land. Each cow costs 100 gold but earns 25 gold per season (assuming it doesn't become a pastrami sandwich for a hungry hordling).

Once the hordlings arrive, you'll hop around swinging the sword the king gave you and trying not to get too dizzy. (Chauncey isn't much of a swordsman and gets befuddled when he swings too wildly.) As the game progresses, you can acquire a variety of other weapons, like the flame-throwing Super Soaker 2000. You may even gain the services of a fire-breathing dragon who can toast any hordling with a single exhalation.

Each year, assuming you've been successful at fighting off the seasonal horde attacks, you'll have a chance to purchase more items and save the game. You can have up to 10 separate saved games, so you won't have to start from the beginning every time you mess up, which you will from time to time.

Not all is as it seems in The Horde, and what appears to be a fairly ordinary game turns out to be full of surprises and humor. (Crystal Dynamics; 415-473-3400; DOS, \$39.99; CD for DOS, \$59.99; 3DO/CD for DOS, \$49.99)

GAME PLAY:

GETTING STARTED:

GRAPHICS:

VALUE:

With excellent acting, writing, and video, plus an intriguing mix of strategy and action, The Horde deserves high praise.



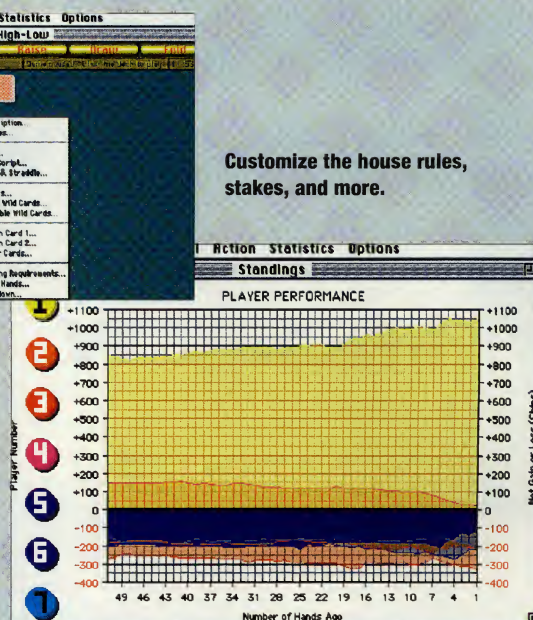
## PowerPoker

By Bob LeVitus

**T**he manual brags that PowerPoker is "the ultimate poker simulation," and I agree. This is the most complete, accurate, and flexible poker simulation I've ever seen. Unlike other computer or video-game renditions, PowerPoker is both a poker game and a meticulously designed simulation.

Playing PowerPoker is simple: the cards are dealt, then each player acts in turn by clicking the Check, Call, Bet, Raise, or Fold buttons. Status indicators beneath the buttons show the minimum and maximum bets, the number of chips in the pot, and a brief description of the action. Players control the configuration of house customs, stakes, limits, and the rules for individual games.

PowerPoker includes nearly 100 poker games, including favorites like anaconda, black mariah, low Chicago, baseball, and plenty



Customize the house rules, stakes, and more.

Check out how well you're doing in the Standings screen.

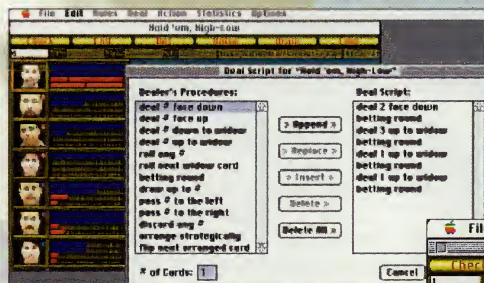
bluff sometimes, and I know they can be bluffed.

It's not a perfect simulation, but it's good. For example, you can win an inordinate number of hands by bluffing big. In a real game, your opponents would catch on; the computerized players never do. Still, if you play fair, the way you'd play if you were betting your own money against intelligent human opponents, the simulation is remarkably accurate.

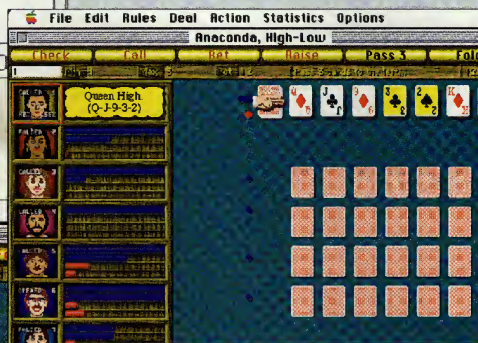
Keyboard shortcuts are built in for just about every action, and there's an AppleTalk network option that lets more than one person play.

I have only two nits to pick. First, two of my favorite poker features—spit cards and pay-to-replace cards—aren't included. Second, there's an option that plays out hands faster after you fold, but it's still way too slow. If I fold, I want the next hand to start immediately.

But never mind the nits: If you're a poker fan, PowerPoker is a great way to play while you learn about the intricacies of strategy and advanced mechanics of poker. (Electronic Arts, 415-571-7171; Mac, \$59.95)



The Deal Script dialog box lets you teach PowerPoker your favorite poker games.



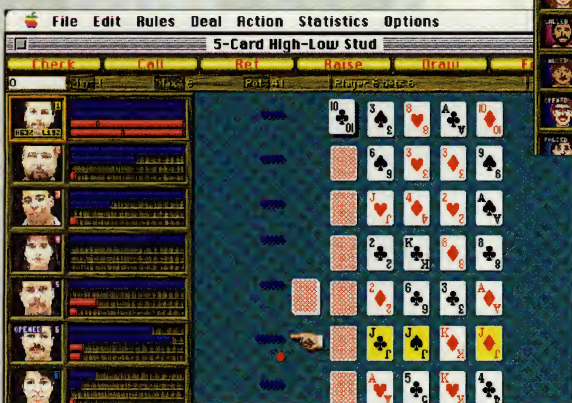
...or animated opponents.

of variations on stud and draw. And if your favorite game isn't included, you can teach PowerPoker to play it.

If you want to play PowerPoker as a game, try the Tournament mode—each player starts with the same number of

chips, and you play until one player has them all.

In other modes, where players can purchase more chips during the game, it's a remarkable simulation of real poker. The computerized players act and react the way real poker players would. They fold when it's prudent and raise when they think they've got the winner. I think they even



PowerPoker's Table window can show you either video players....

GAME PLAY: ♠ ♠ ♠

GETTING STARTED: ♠ ♠ ♠ ♠

GRAPHICS: ♠ ♠ ♠ ♠

VALUE: ♠ ♠ ♠ ♠

Despite a couple of minor flaws, PowerPoker takes computer poker beyond game territory and into the realm of simulation.



# Carriers at War II

By Barry Brenesal

**W**hat would have happened if America had simply invaded Japan instead of dropping atomic bombs on Hiroshima and Nagasaki? Now you can find out, in *Carriers at War II*, the latest strategic war simulation from Strategic Simulations.

*Carriers* concentrates on a decade of fleet-carrier operations in the Far Eastern theater of war between 1936 and 1946, a period of critical development for air and naval warfare. Whether you end up putting a proud new carrier like the Belfast through its paces or dragging around the HMAS Adelaide (a vintage 1918 Australian cruiser that was scrapped in 1949), you'll agree that this simulation has all the loving detail any war-gamer could possibly want.



Click on the briefing map icon to check your losses, squadrons, and victory points in detail.

ments—to a computer-driven “staff officer” via the pulldown menu, *Carriers* hands you total control of dozens of ships and hundreds of planes. If the sheer weight of detail loads you down, SSG’s ingenious solution is to split the command: Take the role of only one combat leader on either side and let the computer handle the others, friends and foes.

Don’t worry about the usual depressing results of turning the throttle over to your computer during battle. SSG’s computer-driven players have a startling degree of artificial intelligence. As a result, they never need to bend the game rules—

**If you want to start with an easy game—and it's a good idea, because**

***Carriers' AI* is so strong—play the Japanese side in the basic Trincomalee, Port Darwin, Force Z, and Java Sea scenarios. The regional British leadership was extraordinarily inept. Place capital ships in front of your carriers for good defense. They're harder to sink than carriers and tend to get mistaken for carriers by search planes at a distance. In nearly hopeless situations against an enemy armada, try a torpedo attack. If it's successful, it'll do a lot of damage.**



***Carriers at War II* substitutes color, clarity, and good artwork for animation—and it works well.**

This same attention to specifics carries over into *Carriers'* well-researched scenarios, some of which faithfully mirror actual events, while what-if variants explore forks along the path of history. (What if the U.S. had invaded Japan? What if Churchill had shown

enough strategic sense to support the Southeast Asian front during the early months of the war?)

As in other recent SSG releases, *Carriers* combines handsome 16-color, high-resolution VGA graphics with easy-to-use controls. Task-force commands are issued through a series of attractive menus on the right side of the screen. General commands that control game preferences, the passage of time, and statistical displays are available from pulldown menus or hotkeys.

While the other major purveyor of war simulations, 360, lets you delegate a variety of tasks—anything from control of supply lines to air bombard-

which makes it especially frustrating when they win, as is usually the case here. You'll have to be alert and clever to beat these computerized brains, and quick to improvise when your painstakingly developed plans fall through the floor.

If you're into strategy war gaming, don't miss out on *Carriers at War II*. Its interface, classy graphics, and remarkably good computer opponents make this the kind of game that you'll be involved in much longer than you planned. (SSG; 904-469-8880; DOS, \$69.95)

GAME PLAY:

GETTING STARTED:

GRAPHICS:

VALUE:

**A great simulation of the air/naval war in Southeast Asia during WWII, which boasts handsome graphics and brilliant, computer-based opponents. You'd better be good, general.**



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# F-14 Fleet Defender

By Tom "KC"  
Basham

**W**ith enough gritty realism to satisfy even hard-core Falcon 3.0 fans and plenty of bombs-away, shoot-'em-up options for action-oriented gamers, F-14 Fleet Defender checks in as the latest and most unusual of the PC-based flight simulators from Microprose.

Fleet Defender takes realism seriously. Unless you choose to disable various features, the damage you do to other aircraft (and vice versa), the success rate of your missiles, radar operation, combat tactics, and flight modeling all closely follow real-world performance specifications. In this game, your F-14 can't absorb nine missile hits and still make it back home.

You have to fight intelligently with the F-14 and engage bandits at long range. The F-14 can hold its own in a knife fight, but you



External views of your aircraft show weapons and squadron insignia.



Where the velocity vector points, your aircraft will go.

need skill and a healthy portion of luck. And you'll require even more skill, plus a steady hand, to bring the 25-ton jet back aboard the moving aircraft carrier.

Fleet Defender also models the F-14's radar system, the AWG-9, quite well. Radar cross-section (the size and shape an aircraft appears when painted by radar) depends on many factors in the real world, including the angle at which the target plane is flying as well as the shape of its fuselage. According to the programmers, every aircraft in Fleet Defender has a different radar cross-section



Black smoke trails a Sparrow missile chasing a Tu-95 Bear.

calculated based on its shape and angle to the emitting radar.

The campaign system is similar to that in Aces Over Europe, in which you do almost no planning but rather fly the missions as commanded. Your success or failure determines which mission you receive next. Fleet Defender takes place during the Reagan years of the early and mid-1980s, and the game includes operations in the Mediterranean and the North Atlantic against a variety of adversaries, including a full-blown NATO-vs.-Warsaw Pact WWII scenario.

Allied, hostile, and neutral aircraft fill each mission. Allied aircraft assist and respond to your radio calls for help. Enemy aircraft respond intelligently to the threats posed by allied forces, and neutral aircraft parade through the combat area with reckless abandon hoping not to be downed by a stray missile. In short, campaign missions are complex, dynamic environments.

Fleet Defender's graphics are outstanding. All aircraft come complete with detailed squadron markings, and weapons can be seen hanging from pylons. Missions are depicted around the clock and in all weather. Night missions in stormy weather make for extremely nerve-wracking carrier landings, and the graphics add to the nail-biting realism. Sound support, alas, is a mixed bag, with some excellent digitized voice and sound effects along with a few hokey, arcade sounds.

I haven't enjoyed a product as much as Fleet Defender since Falcon 3.0. Although it lacks modem play and mission planning, Fleet Defender excels in terms of realism and game play. Microprose plans a mission builder add-on for the future, which will extend the product's life even further. (Microprose; 800-879-7529; DOS, \$69.95)

GAME PLAY:    

GETTING STARTED:   

GRAPHICS:    

VALUE:    

**F-14 Fleet Defender has all the realism and excitement flight-sim fans crave.**



# Righteous Fire

By Al Giovetti



New missions to fly.

**R**ighteous Fire is the surprising sequel add-on to Privateer—a game based in the Wing Commander universe of humans pitted against the cat-like Kilrathi in a never-ending war. At the fringes of the war-torn universe is the Gemini system, with its loose confederation of allied states. Here, an ambitious pilot finds the opportunities in legal or illegal trade, bounty hunting, or piracy.

Once again, you take the role of a privateer. Equally as long as the earlier game, the plot of Righteous Fire brings back your shady old friends and gives you a set of 27 new missions. What's nice this time around is that you can complete the missions in any order, the plot is more forgiving, and failed missions can be repeated until you succeed. However, once you reach a certain point in the plot, the game becomes less lenient and more linear until the confederation is saved from its newest threat.

The best feature about Privateer was the freedom it gave the player to explore the galaxy and establish relationships with different power groups of pirates, militia, bounty hunters, feds, retros, and Kilrathi. Things improve in Righteous Fire. The ship's computer now keeps track of the number of kills per group, and whether the group is friendly or not, to keep you from wandering unknowingly into danger. As the Privateer, you can obtain missions via fixers, mission computers, or the merchant and mercenary guilds.

Privateers can fly any one of four types of ships, each with its advantages for trade and



## New enemies to kill.

combat. Upgrades to the ships can take the form of better engines, system charts, beam and missile weapons, shields, scanners, armor, repair robots, and various special items.

The detailed interiors of bases and base facilities are clear, distinct, and colorful. When you communicate at a base, an animated character is displayed above the text. If text isn't enough, the Privateer Speech Pack provides the digitized voices of friendly and enemy pilots, including the retros screaming, "Eat right-

**Find fixer missions on Oxford, Perry, New Constantinople (Edom), and Pentonville (Oakum) bases, which have four missions each, except for Oxford, which has five. Finish all four missions for the three other fixers before finishing Oxford missions 4 and 5. On capital and shuttle ship defense missions (especially Oxford mission 4), one-third of the attackers will go for the ship you are assigned to protect and two-thirds will go for you. Take out the ones going for the ship first, and then go back and get the rest at your leisure.**



## New equipment to buy.

eous fire!"—the popular phrase from Privateer that inspired this sequel.

Righteous Fire, which requires Privateer to run, is a fast-paced trading, combat, pirating space-opera game enhanced by an absorbing plot, involving music, and captivating sound effects. The result: pure fun. (Origin Systems; 800-245-4525; DOS, \$29.95)

GAME PLAY:

GETTING STARTED:

GRAPHICS:

VALUE:

**Righteous Fire wins by combining the action and excitement of Wing Commander with increased freedom to chart your own course.**



## Who Shot Johnny Rock?

By Bill Meyer

**T**he story's standard enough: You're a down-and-out private eye offered a job by a sultry blonde who sashays into your office with a sob story bigger than her bustline. You need the bucks, so against your better judgment you accept an offer to solve the murder of her beau, a John Travolta lookalike nightclub singer named Johnny Rock.

The concept isn't bad. It lends itself to the American Laser Games approach: arcade-style gun play featuring digitized actors moving on top of still backgrounds. If you liked the action in the company's previous hit, *Mad Dog McCree*, you'll enjoy it again in *Who Shot Johnny Rock?*

The biggest addition to the formula is the mystery ele-

you can pay him. If you don't have the cash, it's off to the funeral home.

To find clues you click on locations on a city map. Unfortunately, you don't see how you get from point A to point B. Instead, you abruptly find yourself at your destination, unlike in *Mad Dog McCree*, where you get around on foot and actually view the transitions between locations. As a result, the game play feels awkward and random.

Another drawback is the sound. Voice-overs suddenly stop and start at screen changes, which adds to the overall confusion. American Laser

Games does provide a fix.

Perhaps the somewhat disconnected introductory sequence best captures the game's haphazard feel: The leading lady is so unaware of the danger she's placing you in that she doesn't even notice the four gunmen trying to plug you while she's talking to you. American Laser Games was trying to make Johnny Rock exciting, but it tends to be illogical instead. (American Laser Games; 800-863-0234; CD for DOS/3DO/Sega/CD-i, \$59.95)



If you have the cash, you'll get some lively commentary and some much-needed first aid.



She's a desperate dame you just can't refuse.

ment—Johnny Rock is sort of like *Clue* with speakeasy tough guys and machine guns. You win by clearing five locations of bad guys, confronting each location's suspect, and gathering a clue—a piece of art that's usually pretty inappropriate for its location. Once you have all the clues, you can open the safe in Johnny Rock's mansion, which reveals an object that identifies the murderer.

Your assailants, naturally, get a big kick out of filling you with lead. When they do, live actors appear in humorous intermission scenes. For example, a wisecracking doctor will sew you up if

**PSST!** Keep your gun placed in the middle of the screen and then move it to the spot you want to shoot. This keeps you from flying all over the screen and puts you in a better position. Don't waste money on ammo. Save your cash so that you can pay the doctor when you're shot. Don't return to a location you've finished with unless your secretary tells you to.

GAME PLAY:

GETTING STARTED:

GRAPHICS:

VALUE:

The game is relatively absorbing while you're shooting, but it lacks a coherent design. It would merit higher marks with smoother transitions and a more logical mystery.



# Microcosm

By Christopher Lindquist

**S**ome things just get better with age, though that's usually not the case with video games. Psygnosis's *Microcosm* looks to be an exception.

Psygnosis originally developed this superslick sci-fi shoot-'em-up two years ago for Fujitsu's FM-TOWNS multimedia machine. Now *Microcosm* is making the leap to several other CD platforms, including 3DO, CD32, and DOS, and it still looks great. But like the *Picture of Dorian Gray*, the game pays a price for staying so handsome so long.

*Microcosm* starts out with a spectacular sequence that unfolds to an impressive soundtrack by former Yes keyboardist Rick Wakeman. This introduction lets you know that things are pretty nasty on the planet Bodor in the year 2051. Two corporations, Axiom and Cybertech, have been literally battling for control of the planet's immense resources. Now Axiom has taken a new tack and injected a mind-control unit called Grey M into the body of Cybertech's president. Your job is to enter the president's body (à la *Fantastic Voyage*) to eliminate Grey M. To make things tougher, a horde of other body infections and defenders wants to keep you from completing the mission. The path to Grey M is quite a trip,

The cinematic opening sequence gives only a taste of the graphical delights to come.

dard lasers and gather power-ups like smart bombs and armor.

But *Microcosm* features a smaller field of play than the standard shoot-'em-up. The area in which enemies appear is only about a quarter of the

**For greater accuracy, lead your target (aim slightly ahead of its line of travel). Even when things get hairy, keep your mouse movements small to avoid shooting past the enemy.**

**Hitachi CD-ROM drive owners may experience some problems. You can usually resolve them by ejecting and reinserting the disc or by turning the drive off then on again. Players with Adaptec SCSI cards may freeze up the computer early in the game. You can avoid this by typing MCOSM -A when you start. This turns off the CD Audio playback.**

screen, and to make the game challenging enough with the small play field, Psygnosis has added "lag" to targeting. This means that mouse movement doesn't correspond exactly with crosshair or ship movement, giving a detached feeling to the controls (don't even bother trying to play with a joystick). The game also throws huge numbers of enemies at you. Combined with the targeting lag, this makes the game feel frantic and out of control, like *Whack a Mole* on amphetamines.

Granted, there is a certain sense of satisfaction when you reach one of the wonderfully realized guardians at the end of a level, but getting there often feels more like luck than skill.

As a piece of video-game art, *Microcosm* is certainly worth a look. But as a game, it lacks the sense of involvement that separates the good shooters from the great ones. (Psygnosis; 800-438-7794; CD for DOS, \$59.95)

GAME PLAY:



GETTING STARTED:



GRAPHICS:



VALUE:



**Great graphics make *Microcosm* worth investigating despite middling game play.**

***Microcosm* looks incredible, but the game play is disappointing.**

especially with *Microcosm*'s astounding graphics. Cut scenes between levels have an otherworldly beauty that equal or better any 7th Guest or *Myst* sequence.

But underneath *Microcosm*'s attractive wrapper is a core of middling game play.

*Microcosm* is essentially a mindless shooter—the ultimate goal is to blow up everything on the screen. As in most shooters, you start with stan-

This is just one of the enemies you face in the race to save Cybertech's president.



# Alone In The Dark 2

By Rick Raymo

**J**ust when you thought it was safe to power down the CPU and crawl out into the summer sun, along comes another big sequel. *Alone In The Dark 2* from I-Motion returns us to the bizarre world of detective Edward Carnby, this time battling a house full of supernatural kidnapper pirates. This title weighs in at nearly double the size of its predecessor, and it almost feels like two completely different games.

The first *Alone* title was a horror mystery inspired by H.P. Lovecraft. You fought demons and ghouls in and under a mansion, facing mind-bending puzzles right and left. The sequel takes its cue from old 1930s gangster movies until the half-way mark, when the plot veers into

they do this is never explained—could it involve the child?). You, however, are not even semi-immortal. You must manage a very limited supply of healing liquid and make every shot count.

That's the first half of the game. Just as you come close to saving Grace, the roles are reversed. Edward gets himself captured, and you take up the part of Grace, who must find a key to unlock his shackles. Things get a little strange here. You now foil the ruthless pirates with ice on the floor and molasses traps, taunt them by sticking out your tongue, and hightail it by skipping instead of running.



Drop the grenade down the chimney before descending from the attic.

*Home Alone* territory.

You begin play as Edward Carnby, who gets a call for help from his old friend Ted Striker: One Eyed Jack and his gang of bootleggers have kidnapped child heiress Grace Saunders and are holding her at their old mansion—known as Hell's Kitchen. It's your job to blast past the dozens of firearm-toting pirates and get Grace out safely.

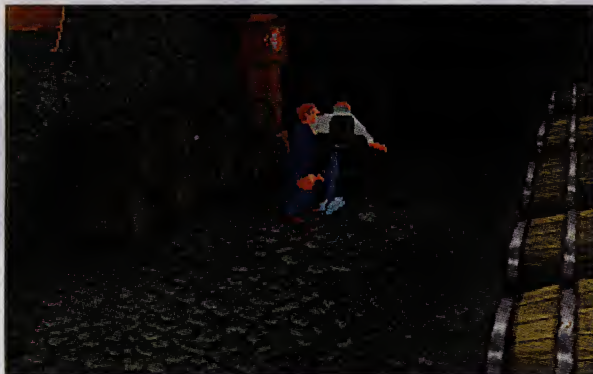
Your mission is complicated by the fact that the bootleggers are really semi-immortal pirates who renew their immortality every hundred years (how



Grace needs to get the key to release Mr. Carnby.

But plot isn't everything. With the exception of some flat, static intermission screens that feel like they were created by a totally different crew of artists, *Alone In The Dark 2* has the same amazing graphics that *Alone 1* had. You get reels of movielike, multicamera action, astounding 3-D perspective, and wacky but endearing polygon-based characters.

The character movement is faster, but the keyboard-based control interface remains unforgiving. The unwieldy controls in the original were worth the effort. But the sequel's increased gunfire makes for aim that practically requires a crystal ball. Before every firefight, all you can do is save and hope that the moon is in the right orbit for accurate shots. It can be done, but it takes the patience of Job.



Wait until the guy gets up before moving the lever to knock out the door.





You're lucky if you hit a barn door at the start of this game.

**PSST!**

☞ Don't bother with the guards at the front of the house. Move the bench. ☞ Diamonds are an Ed's best friend. ☞ When you're out of bullets, or fighting close-in, knock your enemies out of a doorway and whack them with the Battledore (clothes beater). ☞ Eat the fried eggs and ward off the cook's poison darts with the frying pan. ☞ Poison the wine and put it in the service hatch at the entry to the guard's room. ☞ Use the PomPom to get the snakes to follow the puppet. ☞ As Grace, put the teddy bear under the bed, hide, and put the token in the organ. When the bed falls on the guard, ring the bell and ride the dumbwaiter.



To obtain the Santa Suit, either get the ballerina guy drunk or just knock him off.

And how are the puzzles? Well, there aren't a whole lot. As you get past the hedge-maze, you encounter one puzzle that's a direct steal from the Zork series. (Door closed and locked from the other side. Use paper under the door and implement through back side of keyhole to knock key onto paper. Grab paper and key is yours.) The other puzzles are uneven and generally fairly easy. The biggest ones are keeping Edward alive between flasks of healing potion and hiding at the right times when you're playing as Grace.

Alone In The Dark 2 has the problem of sequels to successes. It tries to be bigger and bet-

ter but manages only bigger. Had the developers continued with an H.P. Lovecraft-style theme this one might have earned bigger kudos. But the story line instead seems to follow the game play rather than the other way round. There's

too much mindless gun play at the start. And the outrageous midgame character switch is just plain weird. This game is strictly for diehard fans of the original. They'll certainly enjoy the graphics and they're almost worth the effort. (I-Motion; 800-443-3386; DOS, \$59.95)

GAME PLAY: 

GETTING STARTED: 

GRAPHICS: 

VALUE: 

Alone In The Dark 2 features the same great graphics and the same lousy interface as part one. It also has decent music and sound effects, uneven game play, and a plot that should be entered in the Dumb Story Hall of Fame.



# The C.H.A.O.S. Continuum

By Peter Olafson

**T**he C.H.A.O.S. Continuum isn't so much a game as a modestly interactive demo.

This sci-fi graphical adventure—a Macintosh-to-Windows conversion—has almost photorealistic graphics and eerie music that would do a movie proud. It's full of digitized speech, polished animations, and other inventive touches.

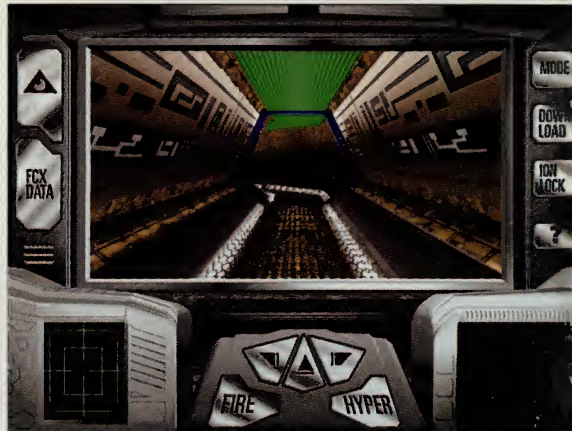
Unfortunately, it doesn't offer much in the way of game play, challenge, depth, size, or speed. It's testimony to both the beguiling effects and the substantial pitfalls of the new gaming witchcraft called CD-ROM.

You control a probe dispatched to establish order in the New Eden colony on the Jovian moon Titan. C.H.A.O.S., the colony's computer, has gone bonkers (as computers in electronic games and bad TV series always seem to do), cut off the colony, and trapped its creators in a parallel dimension.

Moving about the colony and orbiting C.H.A.O.S. square by square in pretty (but sluggish) 3-D, you collect access codes from more receptive computers, dispatch an SOS, and go nose-to-nose with the evil brain and its minions.

I'll admit that, up to a point, I was a willing participant in this little trek. The introduction succeeded in giving me the creeps. I was charmed the first few times I clicked on the game's screen-side download gadget to see a splendidly rendered robotic arm emerge from the probe and plug into the computer. I enjoyed the smooth animation sequences that illustrate the approach to the colony (complete with snappy DJ patter). The C.H.A.O.S. schematics reminded me of the *Alien* movies. And the automated 360-degree panning ability available in full-sized rooms reminded me of The 7th Guest's location-to-location movement.

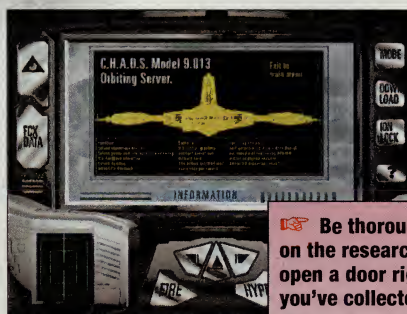
But I wasn't far into the game before it became clear that the entertainment was passive—like a



The colony's research level shows off great graphics but little else.

TV program or movie. There's not much to do except trudge around and plug into various computers. (But it's nice that you can download the codes and maps to the probe for later reference.)

This might have been fun if some actual hacking were involved, but it's as simple as pushing a button. The "intuitive sound cognition test" used as a security measure early in the game proved to be the old tone-and-position-matching game of Simon. The research projects I



Your first look at C.H.A.O.S. No, it doesn't run Windows NT.

**PSST!** Be thorough in the missions on the research level. If you can't open a door right away, try again after you've collected other codes. When you complete your missions on the research level, you're instructed to position yourself behind the departing shuttle. But don't go to the square directly behind it, or you'll get fried. If you have trouble with the 10-minute time limit in the radiation maze aboard C.H.A.O.S., call up the Options screen. When you resume play, the timer is reset. The toughest puzzle in the game is finding a path to C.H.A.O.S. power source. Check out the grating on the left wall of the passage closest to the elevator.



accessed in search of a tucked-away subplot turned out to be grade-school astronomy and physics lessons. Some potentially interesting gaming challenges—tracking the supply shuttle to C.H.A.O.S., for instance—are accomplished automatically.

As a QuickTime short subject, The C.H.A.O.S. Continuum is a pleasant diversion. As a game, it's almost nonexistent. (Creative Multimedia; 503-241-4351; CD for Windows, \$79.99)

GAME PLAY:



GETTING STARTED:



GRAPHICS:



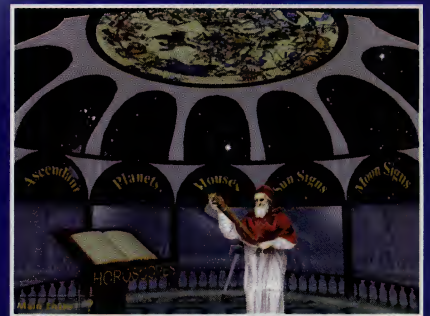
VALUE:



Nice graphics, but where's the game?



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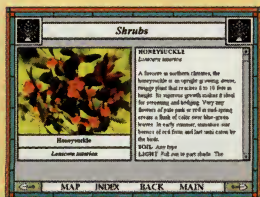
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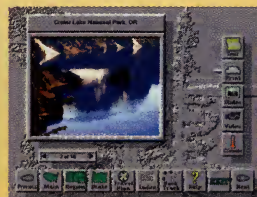
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# Hired Guns

By John Sauer

**L**ock 'n load, bucko. Psygnosis is sending you on a one-way sci-fi mission of mercenary mayhem in *Hired Guns*. This British import puts you in control of one to four characters in a split-screen format to blast the goo—or circuits—out of bio-engineered mutants on the planet Graveyard.

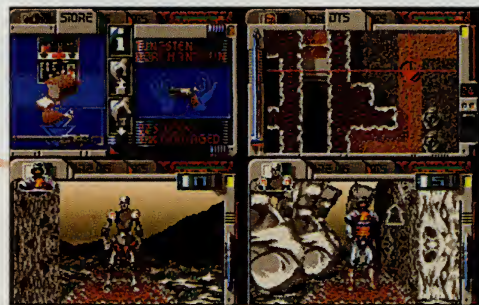
*Hired Guns* comes packed with player characters, game types, and more than 110 weapons and special items. Your main mission is to collect four

fusion reactors and plant them in the field coil generators at the Graveyard Central Spaceport to trigger what the manual calls a “fusion induced thermonuclear explosion.” In other words, nuke 'em till they glow.

While *Hired Guns* lacks the splash and bravado of first-person titles such as *Doom*, run-'n-gun masochists will revel

in the incredible number of weapons and the numerous opportunities to use them. The game can be played as either an intricate RPG or as a more intense action game. Up to four people can play together using a combination of mouse, keyboard, and joysticks. For fun, try scattering in an Action level and hunting each other down. The 20-mission RPG campaign is for those who like long, hard missions.

Once you learn your way through the control patterns, *Hired Gun's* game play gets your adrenaline flowing. Alas, the graphics are a letdown. Given the quarter-screen size of each player's window, one would expect



**Use the Digital Terrain Scanner to map the immediate area. It also displays areas you've already visited.**

tight, defined visuals. But after a well-illustrated opening screen, you get coarse, pixelated graphics and jerky animation. And some of the game's text is so hard to read that you'll squint at the monitor.

But all things considered, I would rather play a good game with so-so graphics than a beautiful game with the complexity of paper-rock-scissors. *Hired Guns* delivers game variety and a high level of challenge. You won't beat this game in one day. (Psygnosis; 800-438-7794; DOS, \$59.95)



**Use the graveyard map to select the area you want to explore. Reenter areas if you want to stock up on ammo.**

**PS!** Use the Auto-leader feature when moving over featureless terrain. Click it off when you ride elevators. When facing enemies a level below, lob a few grenades to clear the way before you descend. Don't accidentally waste your characters in the RPG game. You cannot replace them. The Action game is not as time intensive as the RPG mission. Use it to learn each of the 12 characters' strengths before assembling an RPG team.



**You can pull players back from an exit as long as one of your characters is still in the mission.**

GAME PLAY:

GETTING STARTED:

GRAPHICS:

VALUE:

It may take a while for some users to get up to speed, but *Hired Guns* offers plenty of depth and multiplayer action to make it worth the effort.



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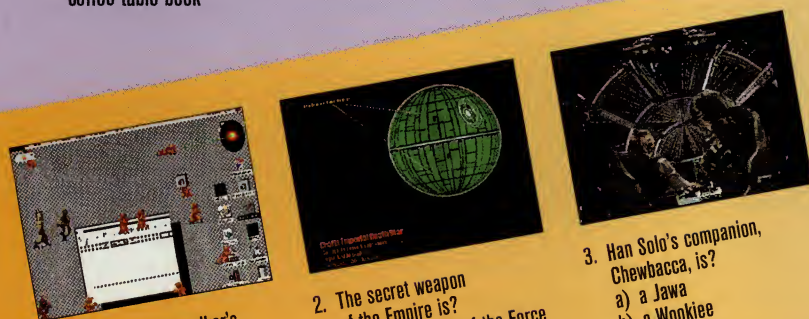
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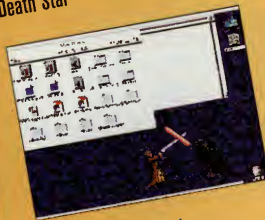
1. What is Luke Skywalker's home planet?  
a) Dagobah  
b) Tatooine  
c) Alderaan

2. The secret weapon of the Empire is?  
a) the dark side of the Force  
b) the Star Destroyer  
c) the Death Star

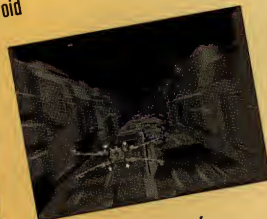
3. Han Solo's companion, Chewbacca, is?  
a) a Jawa  
b) a Wookiee  
c) a droid



4. Leia is a?  
a) Queen  
b) Dutches  
c) Princess



5. OBI-WAN Kenobi is also known as?  
a) Jack  
b) Ben  
c) Steve



6. The arch nemesis of an X-Wing pilot is?  
a) a TIE fighter  
b) the Millennium Falcon  
c) a Y-wing



7. The Emperor's right-hand man is?  
a) Grand Moff Tarkin  
b) Han Solo  
c) Darth Vader

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Send this form to: *Electronic Entertainment Magazine*/Star Wars Screen Entertainment Contest P.O. Box 5960, San Mateo, CA 94404. Deadline for entry is July 31, 1994.

**Electronic  
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# Kingmaker: The Quest For The Crown

By Vox Day

If a rose by any other name would smell as sweet, this game under another name might well be considered incomplete.

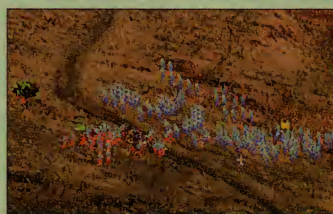
Avalon Hill's long-awaited Kingmaker: The Quest For The Crown is a well-executed, extremely faithful rendition of its popular board-based predecessor but for one exception: it lacks the make-or-break element of multiperson game play.

The English civil wars of the 15th century, now known as the Wars of the Roses thanks to a certain playwright from Stratford-on-Avon, are the basis for this strategic turn-based game. You play as the head of a noble faction battling for control of the royal Yorkist and Lancastrian heirs, who hold the key to sovereign power in the land. Only by eliminating the entire opposing royal house can you crown your candidate King.

The game play is quick and logical, once you get accustomed to the somewhat idiosyncratic interface. Fortunately, the 63-page manual does an excellent job of clearing up any ques-



Stafford and Pole converge on a noble faction as a plague ravages London.



Courtenay engages an out-numbered Hastings in battle.



Augh! This is how your forces get dispersed—usually just before a major battle, too.

frustrating to surround an enemy party in possession of the last opposing royal heir, only to see your forces scattered to the four corners of the realm thanks to nothing but chance. But the winds of fate can help as well as hinder, and the end result is an unpredictable, entertaining game that feels true to the spirit of English feudal politics.

Avalon Hill is to be congratulated for keeping computer Kingmaker faithful to the essence of the board game. It's just too bad that it's strictly a one-player title. The good news is that Avalon Hill is actively considering developing a multiplayer upgrade.

Because war gamers are accustomed to more of a simulation feel, they may not find the quirky interface and



The would-be famous beheading scene. Apparently Magaret of Anjou was a man.

tions that arise.

The graphics are handsome, if not particularly stunning. However, the animated sequences are a tad cheesy, especially the beheading sequence that has caused the U.S.

version to be banned in the U.K. (One wonders why, since the violence certainly isn't on the level of Doom or Mortal Kombat.)

Plagues, mercenaries, Scottish uprisings, and French invasions all provide a random element that can be downright maddening at times. It's pretty

board-game atmosphere to their liking. But anglophiles, medieval history buffs, and fans of the old game will love it. Let the trumpets sound! Kingmaker is finally on the PC! (Avalon Hill; 800-999-3222; DOS and Amiga, \$59.95)

GAME PLAY:



GETTING STARTED:



GRAPHICS:



VALUE:



**Kingmaker is a rich, historical war game steeped in the flavor of its time. It is particularly appropriate for any solo war gamer who appreciates early British history.**



# Ravenloft

By Barry Brenesal

**S**et in the medieval realm of Barovia, Ravenloft is the saga of the all-powerful vampire Strahd von Zarovich. There's only one thing that can stop this sucker: the Holy Symbol of Ravenkind. Unfortunately, it's been stolen from the ineffectual royal family of Barovia.

Strahd has dozens of servant types at his disposal, including simple but ravenous Worgs,



Not all the local inhabitants are friendly in the land of Barovia.

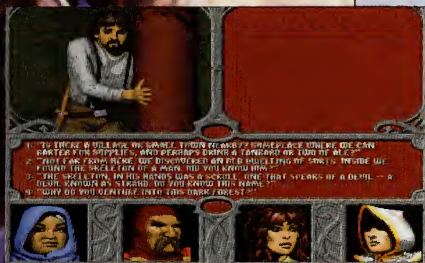
bizarre Living Walls, and powerful Zombie Lords. The Barovian dynasty has just you and the pair of inexperienced adventurers you direct. Still, there's help where you least expect to find it

in Ravenloft, with powerful artifacts and strange allies popping up along the way.

If this sounds like a typical role-playing fantasy, think again. Many standardized gaming elements have been rethought to advantage. For example,

**After you defeat the first lone assassin in the game, rest your characters and learn spells. Only then should you pick up abandoned objects—they trigger a spell that lands you in battle. Once you've identified the type of undead that is attacking you in a given battle, back up and try to kill them at a distance with the appropriate magic or weapons. Some undead can paralyze you up close, cause disease, or even drain experience levels. Check the automap frequently for NPCs you can't otherwise see. Some provide information, while others add to your party strength.**

**Ravenloft requires MS-DOS 5.0 and up.**



You'll interact with the Barovian settlement in Barovia, the setting for the adventure.

since you begin with two party members and can add only two more—both computer-generated—combat is more life-like, less fantasized steroidal-warrior style. There are fewer megabattles where the game must assume you've created six party members with 18 or more statistics.



Ravenloft's combat sequences are also improved compared to older games. Spell attacks across a distance pause the game, allowing you to better line up the cursor with a target. Movement occurs in smaller, virtually seamless increments, so you can weave and dodge back and forth during battle—as can your opponents.

Conflict itself, however, is only part of Ravenloft's challenge. The game offers many more opportunities for character interaction and puzzle solving than the standard role-playing fare.

Ravenloft's graphics are attractive. The wide-angled, first-person landscape view combines polygonal fill with bit-mapped objects to good effect. Better still is the artwork in the inventory screen, which displays active weapons, objects, and armor. Everything is customized: chain helms differ from leather ones, and each weapon is distinctive. The prayer- and spell-memorization screens are also well drawn, and they're much easier to use than comparable screens in other products.

The interface is better, too. Tired of those artificial "steps" that jerkily jump your party across the terrain? Ravenloft lets you switch between steps and a smooth scroll. And its Automapping function, which is easily the best available lets you see maps for any of the areas you've visited, includes an add/erase text mode, and generates different-colored dots to indicate nearby monsters, nonplayer characters, furniture, and useful objects.

Ravenloft marks a strong step forward for SSI's epic role-playing fantasies with this cleverly designed, well-plotted, and atmospheric game. Let's hope the company follows it up with more of the same, soon. (SSI; 408-737-6800; DOS, \$80; CD for DOS, \$65)

GAME PLAY:



GETTING STARTED:



GRAPHICS:



VALUE:



Strong graphics and game play, plus an improved interface, make Ravenloft worth a look.





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# MEGARACE™



## Star Trek The Next Generation: A Klingon Challenge

By Jim Nash

**S**omebody better tell game makers the definition of *interactive*. It means two or more things reacting to each other. But Decipher throws the term around without backing it up in its "interactive" VCR board game *Star Trek The Next Generation: A Klingon Challenge*.

The box proclaims "This game never plays the same twice!" But that's because it's unlikely to be ever played more than once. What we have here is a compromise between role-playing board games and computer games with high-resolution graphics. The idea has potential, but the experience leaves you wanting something more.

The story is standard fare: The starship *Enterprise* is in space dock awaiting repairs. A crew of up to 12 game players is on board when a kamikaze Klingon named Kavok hijacks the ship to Klingon country, with the intent of attacking Klingon vessels and rekindling an interstellar war.

Players take game pieces and roll a die to traverse an *Enterprise*-shaped board. Each player tries to collect five "isolinear chip" tokens and a phaser. A player who manages to get all the

pieces (not to mention some lucky die rolls) and reach the bridge can stun Kavok, save the *Enterprise*, and win. If no one manages to get to Kavok before the end of an hour-long game, Kavok blasts the *Enterprise* into space dust. The players are also hindered by having to obey all of Kavok's orders during the 60-minute flight. The Klingon combatant appears courtesy of a VHS videotape that plays throughout the game.


It all sounds like fine fun, then you start reading the rule sheet. Decipher has devised many twists, turns, and weird little rules to confound players on their route to saving the *Enterprise*. You must learn several Klingon phrases to understand some of Kavok's commands, for instance. Players are also required to wear a "communicator badge" and say "Yes, Captain Kavok!" every time the Klingon addresses them. That's about as interactive as things get.

But the biggest problem is that the game gets old fast. You can play it a second time, but Kavok always says the same things, and the fun fades fast. Only true Trekkies need apply for this excursion. Once. (Decipher; 804-623-3600; VHS tape, \$50)

GAME PLAY: 

GETTING STARTED: 

GRAPHICS: 

VALUE: 

**A Klingon Challenge is ideal for fun at a "Star Trek" theme party, but after that it will soon end up on the shelf with all the other Trek toys.**



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# John Madden Football

By Christopher Lindquist

Unless you're the type who thinks falling down the stairs is a basket of giggles, the idea of playing in a pro-football game is about as appealing as a migraine. For those with a better-developed sense of self-preservation, John Madden Football for the 3DO offers all the vicarious thrills of watching a gridiron matchup on TV but lets you control the action while seated safely on your couch.

The game looks and sounds like a star. Digitized players clash on a 3-D field to the roar of a high-quality soundtrack. Intermittent video and audio clips of John Madden add to the "Monday Night Football" feel. A scouting report helps you plan your game by letting you view video highlights and examine the nitty-gritty details on every player from each of 28 NFL, 2 All-Madden, and 8 All-Time Greatest teams. Instant replays of your fabulous feats can be tilted and zoomed to focus on any player. This is the way football games are supposed to look.

How you play is up to you. Jimmy Johnson wannabes can just call the plays and let the electronic athletes batter through to their conclusion. If you prefer a more hands-on approach, call the snap, avoid the rush, choose your receiver, and dive for the ball—touchdown!

Madden has all the makings of a great game, but keep in mind that it is certainly a game, not a simulator. It's ideal for a quick round of pigskin tossing, but serious foot-

SCOUTING REPORT					
COWBOYS					
VIEW OTHER TEAMS					
QUARTERBACKS					
Player	No.	Range	Accuracy	Speed	Scramble
QB1	8	13	14	3	3
QB2	18	8	10	3	3



A video scouting report helps you identify the best matchups between players.

The defender's down, so get those hands in the air and make the catch!

**PST!** Defensive and offensive players both are more likely to get their hands on the pigskin if you hit the B button as the ball approaches. Madden's artificial intelligence isn't all that smart. You can often confuse it by using passing plays in running situations and vice versa. Press the A button to make your defender dive at kickers who are kicking field goals and extra points. With a little practice, you'll have good odds of blocking the attempt.



Choose your plays carefully, especially when you're up against a superior team.



Looks like that last play kept this drive alive.

ball fanatics may be disappointed. Players can't be injured and they don't get tired, so nothing prevents you from taking advantage of a mismatch on every single play. (I once took advantage of this to the tune of 437 passing yards in 20 minutes against the awesome '85 Chicago Bears. Even worse, I did it with the '93 New England Patriots.)

The computer doesn't always behave rationally, either. Punt returners will almost always bring a kick out of the end zone, no matter how deep the kick or how close the defenders. Fans of PC football sims may also notice the lack of a play editor, and you can make only one player substitution—the quarterback.

Madden lacks a bit in the challenge category, too. Once you get used to controlling the quarterback and receivers, winning can become quite easy—too easy. With two equal teams, the one with a reasonably competent human at the helm will win every time.

Despite the flaws, John Madden Football for 3DO is still a fun play, especially against a human opponent. So if you own a 3DO, put Madden on your "to buy" list. (Electronic Arts; 800-245-4525; 3DO, \$59.95)

GAME PLAY:

GETTING STARTED:

GRAPHICS:

VALUE:

Madden for 3DO looks and sounds great, but some players might find it too easy.



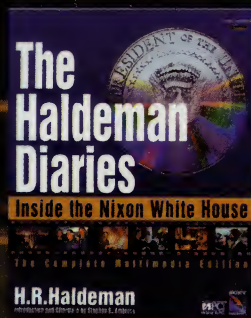


Explore the terrifying and fascinating world of earthquakes in this interactive multimedia CD with Ted Koppel and the cameras of ABC News. Combining 40-minutes of film footage of the world's most dramatic earthquakes with graphs, maps, charts and thousands of photographs, *Earthquake* reveals both the scientific findings and the human dramas behind these cataclysmic forces.

Authoritative text from the book *Terra Non Firma*, by Stanford earthquake scientists, plus instructions on how to prepare for and survive an earthquake make this interactive CD a must for parents, teachers and anyone interested in the natural forces that impact our lives.

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From the grandeur of the inauguration to the Watergate scandal that destroyed the Nixon presidency, this is H.R. Haldeman's complete declassified journal as never before experienced. Featuring 45 minutes of stunning, never-before-seen home video shot personally by Haldeman when he served as Nixon's chief of staff, plus 700 photographs, audio narration, and the entire 2,200-page unabridged journal, the Haldeman Diaries multimedia CD is the ultimate insider's account of the day-to-day events that shook America.





# Do-It-Yourself Multimedia

Upgrade kits turn boring, old PCs into high-tech powerhouses.

**M**aybe it was Kat pleading for your help from a computer-store demo of Critical Path. Or was it Peter Gabriel explaining the genesis of his interactive album *Xplora*1? Maybe you gave in the umpteenth time your 12-year-old asked why Sally has a multimedia encyclopedia and she doesn't. Whatever the reason, you know that it's time to add multimedia to your boring, old PC.

You could go out and buy all the components you need—CD-ROM drive, sound card, speakers, and any necessary interfaces—and patch them together in your system over the next long weekend. But you'd better pray that your new sound card's SCSI interface really will work with that bargain CD-ROM drive. A simpler approach is to buy a multimedia upgrade kit that packs all the basic components you need, plus software, in a single box. These kits will definitely save you time and money in the long run.

At first glance most multimedia kits seem to offer pretty much the same thing. But you'll want to select an upgrade kit carefully, since *kit* can mean anything from a random packaging of generic components (not necessarily a bad thing) to a name-brand collection of audio and video boards, a CD-ROM drive, installation software, accessories, and multimedia titles.

You'll also want to pay close attention to the CD-ROM drive and sound board included in the kit. Although most vendors ship components that meet the Multimedia PC Marketing Council's MPC-2 specification, make sure that the drive is a double-speed model. The sound card should support 16-bit

sound. And game players should check for compatibility with Creative Labs' Sound Blaster standard, which effectively rules the gaming industry. That's why you should beware of "bargain" kits that sell for extremely low prices. These kits often contain older components that won't do the job for today's titles.

To give you an idea of what's out there, we picked seven popular kits that meet the requirements, and even built a kit of our own. Then we put them to the ultimate test: We installed them ourselves. Results were mixed, as was the quality of multimedia the kits delivered. But if you stick to the best our list has to offer, you'll be sure to find something that'll keep your discs spinning and your ears ringing.

## ASL Cyber Audio SRS Kit

Don't laugh at ASL's seventies-sounding claim of "surround sound." The Cyber Audio upgrade kit includes a potent sound board supporting General MIDI, a built-in sound synthesizer with 1MB of sampled sounds and 32 voices, and a Sound Retrieval System chip that adds a richer dimension to multimedia audio.

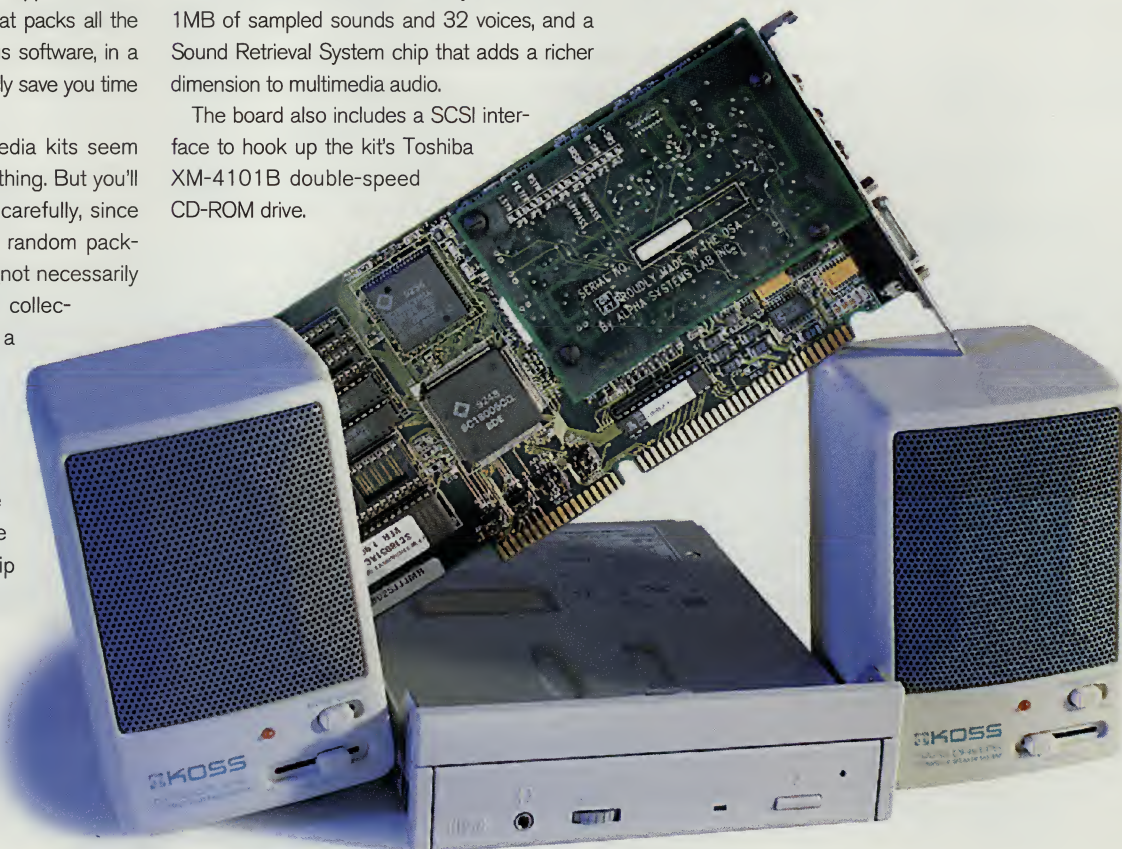
The board also includes a SCSI interface to hook up the kit's Toshiba XM-4101B double-speed CD-ROM drive.

The Koss speakers included in the Cyber Audio kit aren't anything to shout about, though—they sport the standard trail of awkward cables and mini-power supplies. You should replace them with something more in keeping with the quality of the kit's sound board. But at the heady asking price of \$750, ASL should have taken care of the speaker situation itself.

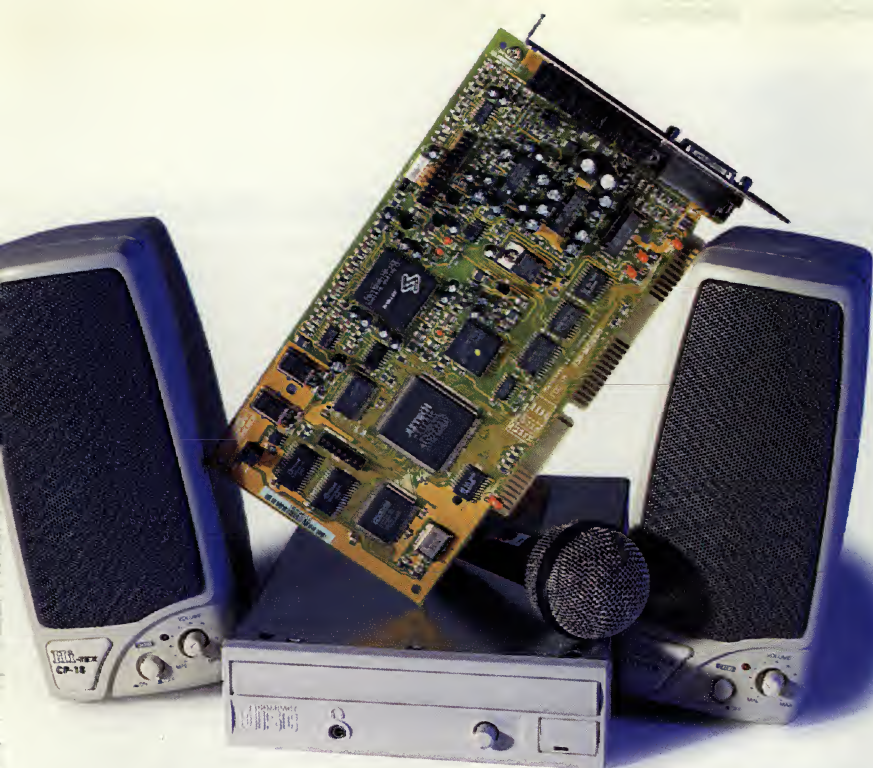
You won't find any sizzling CD-ROM titles in the Cyber Audio kit, but you will get the useful Voyetra Multimedia Sound Software, which lets you take advantage of the sound card's many high-end features. More important for gamers, the sound board is compatible with the Sound Blaster standard. And as a bonus, the Cyber Audio kit includes a headset-mounted microphone so that you can experiment with the sound board's voice-recognition features.

If this \$750 kit weren't so pricey, it would be the soundest kit in the pack. (Alpha Systems Lab; 800-576-4275; \$750)

PHOTOGRAPHS BY DAN CLARK







## Aztech Sound Galaxy DoubleSpeed Multimedia Upgrade Kit

At first, the Aztech Sound Galaxy kit appears to be a well-integrated effort aimed at the average computer owner. Unfortunately, looks can be deceiving.

The heart of the system is the double-speed CD-ROM drive from Laser Magnetic Storage and Aztech's own Sound Galaxy Pro 16L 16-bit sound card. Aztech also includes the obligatory pair of low-grade speakers, a microphone, and a pile of software including The Software Toolworks Encyclopedia and Enhanced Battle Chess for CD-ROM. The speakers don't come with a power supply, a rather shabby omission that'll have you running down to the store for two sets of D batteries or an adapter.

You'll appreciate the break, though. Installing the Aztech CD-ROM drive and sound card (which doubles as the drive's interface card) is a nightmare.

Like too many multimedia kits, the Aztech doesn't come with an integrated installation manual. Rather, it has one booklet for the CD-ROM drive, another for the sound card, and yet another for the software. Granted, each manual does make passing references to installing the entire upgrade kit. But the CD-ROM drive installation program and the sound card setup software seem determined to drag users down the muddy lane of I/O ports and interrupt request lines, offering conflicting advice along the way.

The CD-ROM drive software gives you the

chance to select ports and IRQs. Then the sound card setup gives you another chance. Neither checks with the other, and it's possible to totally botch the operation by selecting the same settings for each device with no warning or assistance from either package.

The tough installation, the contradictory installation manuals and software, and an unimpressive bundle of multimedia titles make this kit a good choice only if you find it dirt-cheap. (Aztech Labs; 510-623-8988; \$499)

## Do You Have What It Takes?

**B**efore you plunge in and buy a multimedia upgrade kit, take a careful look at your current system. You may require more than just a CD-ROM drive and sound card to turn it into a multimedia machine. In some cases you'll be better off buying a new multimedia PC.

◆ Even a bare-bones multimedia system needs a solid core if it's going to run today's power-hungry titles. The Multimedia PC Marketing Council has laid out some guidelines for what it calls MPC-2 multimedia systems, and many titles need a system that meets these requirements to run at their best. Call (202) 331-0494 for a complete list of the requirements.

◆ If you're thinking of upgrading the two-year-old 386 PC that served you loyally for personal finances and the kids' education, you'll need more than a simple multimedia upgrade kit. The MPC-2 specs require at least a 486SX processor to provide the horsepower necessary for processing high-resolution video and high-fidelity audio. The technically inclined can replace their 386-based motherboards with 486 models, but that will add \$200 to \$1,000 and a score of potential headaches to the multimedia upgrade.

◆ You're probably due for a memory boost, too. MPC-2 specifies 4MB of RAM, but you'll enjoy your titles a whole lot more if you have at least 8MB. Not only will you be able to run the newer multimedia and simulation titles that demand ample memory, but your standard Windows applications will thank you, too. This is a fairly easy upgrade, but it'll run you another \$30 to \$50 per megabyte.

◆ MPC-2 standards also call for at least a 160MB hard drive. Most CD ROM titles like to install a few megabytes or more of software on your hard disk over and above the 20MB or so your operating system uses. Buy a dozen titles, and you'll be out of gas pretty quickly. For around \$150 you can give your skimpy drive more life with a data-compression program like Stac Electronics' Stacker. (Stac Electronics; 800-522-7822; \$149) A higher-performance alternative is adding another hard drive for \$150 to \$300.

◆ If you don't have Super VGA video on your system, that will need a fix, too. Some multimedia titles will run on a standard VGA video card, but more and more need Super VGA to look really sharp. A decent Super VGA card will cost \$150 to \$200. Of course, a Super VGA video card requires a Super VGA monitor. If you don't have one of those, add another \$250 to \$500 to your tally.

◆ If your PC comes up short in several of these areas, give up on upgrading it. You can buy a brand-new multimedia PC for less than \$2,000.





## Creative Labs Game Blaster CD 16

Designed for fun, the Game Blaster kit includes Creative Labs' Sound Blaster 16 audio card, a Creative Labs double-speed CD-ROM drive, a joystick, and a stack of hot games. The kit also includes a pair of fine-sounding Yamaha SBS300 speakers.

We were able to install the complete Game Blaster kit in less than an hour, and the whole process went flawlessly. The prerelease kit we reviewed did not include integrated setup instructions, but even so, installing the individual components and software posed no problems.

Installed on an aging 386/40 PC, with just 4 MB of memory, however, the Game Blaster's performance was a bit unreliable. Iron Helix continually crashed at roughly the same point in the game. Critical Path repeatedly died and took the system with it just as a main character was getting zapped. And video playback seemed choppy than it did when running on the other kits. On the plus side, all our other multimedia titles functioned as expected.

Despite the stumbles, there's no doubt the Game Blaster kit will initiate you into multimedia

entertainment with a vengeance. Among its 11 bundled CD titles, you'll find no dictionary, public-domain thesaurus, or tired old encyclopedia. Purely for funsters, the Creative Labs kit drops a set of easy-to-install hardware and hot games such as SimCity 2000, Iron Helix, Rebel Assault, and Return To Zork into your lap. Whaddya you want multimedia for anyway? Enlightenment or sumthin? This bundle alone makes the kit a good buy. (Creative Labs; 800-998-5227; \$549)

## Media Vision Memphis

The Memphis is a snappy-looking package combining two high-quality speakers and a CD-ROM drive housed in a unit that also works as a monitor stand. To get started, simply connect the speakers to the main box with a single connector cord (no power supplies to mess with); install a no-jumpers-or-switches SCSI interface board in your PC; and link the whole assembly together with a SCSI interface cable. Install the startup and utility software, and you're ready to go. Total time from opening the box to running your first multimedia title? About 15 minutes. And you probably won't even need to watch the included installation videotape.

The Memphis features a double-speed CD-ROM drive, a microphone, and a sound card. The high-quality sound is provided by Media Vision's 16-bit Pro AudioSpectrum board, which supports Sound Blaster and AdLib audio formats. Sound input can come from the microphone, line inputs, or the CD-ROM drive, and an array of software utilities let you record, mix, and play MIDI and Windows WAV files.

More than a dozen CD titles come with the Memphis, including Arthur's Teacher Trouble and Compton's Interactive Encyclopedia. The bundle also has plenty of titles for the kids, such as Kid's Zoo and Compton's NewMedia's Multimedia Encyclopedia.

If ease of installation is key for you, the Memphis is a good choice for an easy-to-use, if pricey, upgrade kit. (Media Vision; 800-845-5870; \$899)





## Tools at the Ready

**N**one of the multimedia upgrade kits reviewed here requires much more than flathead and Phillips screwdrivers for installation. We installed and removed all seven kits with a regulation Swiss Army knife, Climber model. The blade even came in handy for opening all the boxes, cellophane wrapping, and disk envelopes. But there are other things you can do.

**① Create a boot disk.** Having a floppy boot disk is a must before you start installing your new multimedia toys. If you've already installed optional hardware on your system—a fax/modem, for example—you're a prime candidate for a system lockup if it conflicts with any components in your kit. The installation programs for all the kits will alter your CONFIG.SYS and AUTOEXEC.BAT files to add device drivers for the CD-ROM drive and sound card, and in the process they might create a conflict that will cause your system to crash when you reboot.

To recover, you'll need a boot disk that bypasses all the new drivers. You can create one by putting a *blank* floppy disk into drive A: and typing FORMAT A: /S. If the system won't boot after you install the kit, put the disk in drive A: and restart the computer.

MS-DOS 6 users can accomplish the same thing without a boot disk by restarting the machine and holding down a Shift key when the "Starting MS-DOS" message appears on the screen. Once the machine has booted, you can edit the configuration files to remove the offending drivers. Call tech support if you need help.

**② Use a bright light.** Most upgrade kits require a bit of intricate fiddling with connectors and cables. Nothing overwhelming, mind you, but enough to keep you on your toes. No kit has a complete array of idiot-proof connectors, and it's all too easy to put cables and fittings on backwards, upside-down, or even on the wrong connectors. You don't want to smell an overheated chip as warning that you've done something wrong. Trust us on this.

**③ Keep clear of clutter.** You need a clean, well-lighted table where you can arrange your components, manuals, and software. There is nothing worse than misplacing a one-of-a-kind connector under this month's bills or last night's pizza box.

**④ Read the manuals.** Sure, reading manuals is boring, but it's for your own good. Unfortunately, many upgrade-kit vendors have not yet learned how to construct a well-organized setup manual. Leaf through all the documentation to spot potential trouble spots before you begin. Hint: Any discussion of IRQs means you'd better have a tech-support phone number handy.

Installing the SoundWave 32/CD kit was simple and straightforward, although the single setup manual could have dispensed with the lengthy, upfront discussion of IRQs and DMA channels. Such technical information is best left for an appendix, especially considering the kit's easy installation. The space might better have been used telling you how to attach the unlabeled audio connectors to the sound board.

The SoundWave board, which also provides the CD-ROM interface, produced reasonably good audio through its advanced digital signal processor (DSP) design. The DSP lets the SoundWave support almost every audio format, including Sound Blaster, AdLib, and General MIDI. It also includes 1MB of onboard sound samples, and an enhanced set of samples you can purchase for \$39.95. (Orchid Technology; 800-767-2443; \$549)

### Orchid SoundWave 32/CD Multimedia Kit

Orchid wins the award for truth in marketing. The SoundWave 32/CD kit delivers only two items: the company's SoundWave 32 sound board and its CDS-3110 double-speed CD-ROM drive. You

also get a few multimedia titles, such as LucasArts' Day of the Tentacle and the requisite installation software, but the chintzy speakers, microphones, or headsets found in other kits are missing. That's fine, since for \$50 you can buy better speakers than you get in most kits anyway.



## Reveal MultimediaFX Elite

If you're looking for a complete multimedia upgrade kit of high-quality, easy-to-install components, the Reveal Elite may be the way to go.

The Elite doesn't rely on only a pile of popular multimedia titles to get your attention. Sure, it includes discs like The Software Toolworks' Encyclopedia and Interplay's Lord of the Rings, but the real appeal of the Elite is its core set of hardware and software utilities.

The Reveal Elite comes with a double-speed CD-ROM drive; a 16-bit Sound Blaster-compatible sound card; a hefty and durable-looking joystick; industrial-strength stereo speakers with their own power supply, a microphone for karaoke enthusiasts, and a pair of headphones. It's about as complete an upgrade kit as you can find.

The Elite's installation manuals and software are another strong point. An 11-by-17-inch poster entitled "Reveal Installation Tips" includes installa-

tion dos and don'ts, the number for Reveal's 24-hour technical-support department, and—on the other side—an illustrated hardware-installation overview. The installation manual itself is lucid and coherent and covers every step of the

setup process. No cross-referencing needed here. And watching the supplied video will aid anyone who's never popped a PC's hood.



## Roll Your Own Multimedia Kit

**M**ost multimedia upgrade kits aren't aimed at power users. So if you're the hands-on type who demands the latest and greatest in tech toys, like a quad-speed CD-ROM drive or a wave-table synthesis sound card, you'll probably have to upgrade your PC yourself, component by component. It's not impossible, but you have to do your homework.

To show what you can do on your own, we put together a multimedia combination containing technology not usually found in commercial kits. We started with an external version of the E2 Editor's Choice Award-winning Toshiba TXM-4101 CD-ROM drive. This flexible player is easy to swap between machines. We also chose Creative Labs' brand-new SoundBlaster AWE32 wave-table synthesis sound card for richer sound and high-end Altec-Lansing ACS 300 speakers, which are equally at home playing The 11th Hour and Beethoven's Fifth.

Putting it all together was certainly more complicated than installing a standard kit. With kits, the installation software usually comes on a single set of disks that load CD-ROM drive and sound-card drivers simultaneously. The installation software for our two components naturally comes on separate sets of disks. And as for getting everything to work, kit purchasers again have the advantage. Kit makers, at least the good ones, test their peripherals together. We didn't have the luxury of doing this before we made our purchases, so we had to be ready to force our components to get along.

Even getting individual components up and running wasn't a breeze. Toshiba's installation guide isn't particularly user-friendly, and the setup

software asks a bewildering series of techie questions like "Change default cache size?" Conscientious multimedia kit vendors wisely avoid forcing end users to make such decisions themselves. To make matters worse, we had to use the MS-DOS SETVER command to make Toshiba's drivers function properly. Hurdles like these may be the best argument for preassembled upgrade kits.

Fortunately, setting up the sound card was easier. Creative's accessible manual walked us through installing drivers and utility software for both DOS and Windows while shielding us from excessive technical lingo. Then we simply plugged the speakers into the jack labeled SPK OUT on the sound card.

Amazingly enough, when everything was installed and we rebooted the machine, it all worked. But not everyone will be so lucky. And resolving conflicts with home-brew upgrades means phone calls to a couple of technical-support lines just to identify the problem. All-in-one multimedia kit vendors provide a single phone number for all your questions.

Rolling our own multimedia upgrade kit didn't save us any money, either. The total retail price of the sound card, CD-ROM drive, CD-ROM interface card, and speakers was more than \$1,300, and that didn't include any of the multimedia software usually bundled with commercial kits. Doing it yourself is the only way to get exactly what you want, but you'll pay for it in both time and money. Keep that in mind before you look down your nose at a prepackaged kit.

—Christopher Lindquist



The Reveal kit installs easily in about half an hour. The factory-preset interrupts and I/O ports didn't require any adjustment or twiddling, which is partly good luck and partly good planning by Reveal.

Subjectively, The Reveal's performance was laudable. Within ten minutes of software installation, music from the Tahitian Choir was running through the included audio-mixing utilities. Although the headphones could stand an upgrade (they seem similar to the throw-aways distributed on some airlines), the pair of 4-watt speakers emit rich, sonorous tones you can control with separate treble, bass, and volume controls.

Our only beef with the Elite is its \$649 list price. But if you value your time and sanity, you'll like the quick, uncomplicated setup and the well-integrated components. (Reveal Computer Products; 800-326-2222; \$649)

## Sigma ReelMagic CD-ROM Upgrade Kit

Sigma's ReelMagic puts on a good show with full-screen, full-motion MPEG video as well as standard multimedia, but you should think twice before buying a ticket.

Part of the problem is that Sigma hasn't quite gotten the installation and integration issues straightened out. The Sony CDU-33A double-speed CD-ROM drive installs quickly and easily. The brief instructions are lucid and clear. Installing the combination MPEG video-and-sound card is no great strain either. But from there on things get a bit dicey.

First, you'll have to connect your VGA card to the ReelMagic MPEG board via an included VESA connecting cable. Oh, did we forget to mention that your VGA card has to have a VESA connector? It's right there in the fine print on the package.

If you have a VESA connector, things go swimmingly—sort of. To get the board to work, you need to run installation software that shows you a "control panel" of all your system interrupts and IRQ lines. Unfortunately, the software doesn't seem all that accurate, and it displayed incorrect settings. The video startup also seemed flaky, and we had to engineer a workaround to get the board to run properly.

In fairness, the ReelMagic's MPEG video is most impressive, and cruising through interactive, full-screen movies provides a window into the future of multimedia. It's clearly superior to the tiny video images available through other standards.

The ReelMagic sound is another matter. The sound board played Sound Blaster-compatible titles, but it delivered a grainy tone akin to that of Super 8 movies transferred to videotape or ancient blues classics etched onto CD. It just ain't the same. Nor is the sound helped by the chintzy speakers included with the system. Then again, bad speakers seem the standard in the upgrade-kit business.

The ReelMagic kit offers a reasonable multimedia introduction plus MPEG video compression. But at almost \$800, it's no bargain matinee. (Sigma Designs; 800-845-8086; \$799)

## Making Your Best Bet

How do you pick a winner? All these kits support MPC-2 standards, so there's no problem there. Price is certainly an issue, but what good is saving a few bucks if the kit is so hard to install that you end up returning it?

If you're doing a cost/benefit analysis, consider the software bundle. Do the titles sound familiar? Do they match your interests?

Lots of games won't help if you want an educational experience for the kids.

But the real key is ease of installation. Consumers return lots of multimedia upgrade kits to retail stores because they can't get them to work. That situation will continue until vendors figure out how to make installation simple and painless. Still, kits are easier to deal with than individual components, and carefully choosing a kit can further simplify the process.

If you want to get up and running with minimal delay, consider the Creative Labs Game Blaster CD 16, the Reveal MultimediaFX Elite, or the Media Vision Memphis. While none of these kits sports cutting-edge technology such as triple-speed CD-ROM performance or wave-table synthesis sound, they all install easily and with minimal fuss. What's more, their quality components will provide good service over the next couple of years, when it will be time to consider upgrading to whatever multimedia offers next.





# Graphically Speaking

**Y**ou say you've got the multimedia blahs? You say that no matter what game you fire up on your system, it's a let down. You seem to have everything you need: a double-speed CD-ROM drive spinning the hottest CD titles, a 16-bit sound card delivering CD-quality audio, and high-powered speakers blasting it across the room.

So, what's the problem? Maybe it's your video card.

You probably haven't given much thought to video since you bought your PC or Mac. After all, your PC card most likely supports the VGA or Super VGA (SVGA) graphics that you need to run most multimedia titles and games. And if you have a Mac, chances are your video is built-in. To run your favorite Mac games you usually have to worry more about whether you have a color display and how many colors it supports.

And your system's video hardware must be doing a fine job since you can see what you're playing. Right?

Think again. Your video card does a lot more than just light up pixels on the screen. It also determines how many colors you can see, how fast—or slow—your system displays graphics, and even whether you'll end up with a headache after a four-hour Microcosm binge.

With all that on the line, upgrading your video card can be one of the most cost-effective ways to improve your multimedia system. You won't have to spend a fortune, and you'll see the benefits immediately. PC video cards start at around \$100 for low-end models and zoom to more than \$1,000 for cards that satisfy the demands of graphics professionals. Average users who just want to juice up their performance can expect to pay around \$300. Mac owners should prepare to shell out a bit more, around \$500 to \$1,000 for a video accelerator card that will display more colors than you could possibly name.

## It's in the Cards

The first step is to decide what breed of video card you need. That depends on the types of games and software titles you run. Die-hard DOS users who'd rather be caught

dead than running Windows will be happy with a generic SVGA board. This type of video card is called a *frame buffer*, and it simply transfers data from the PC to the monitor. Unlike higher-end video cards that contain onboard processors, frame buffer boards leave all the graphics-processing work to your system's CPU.

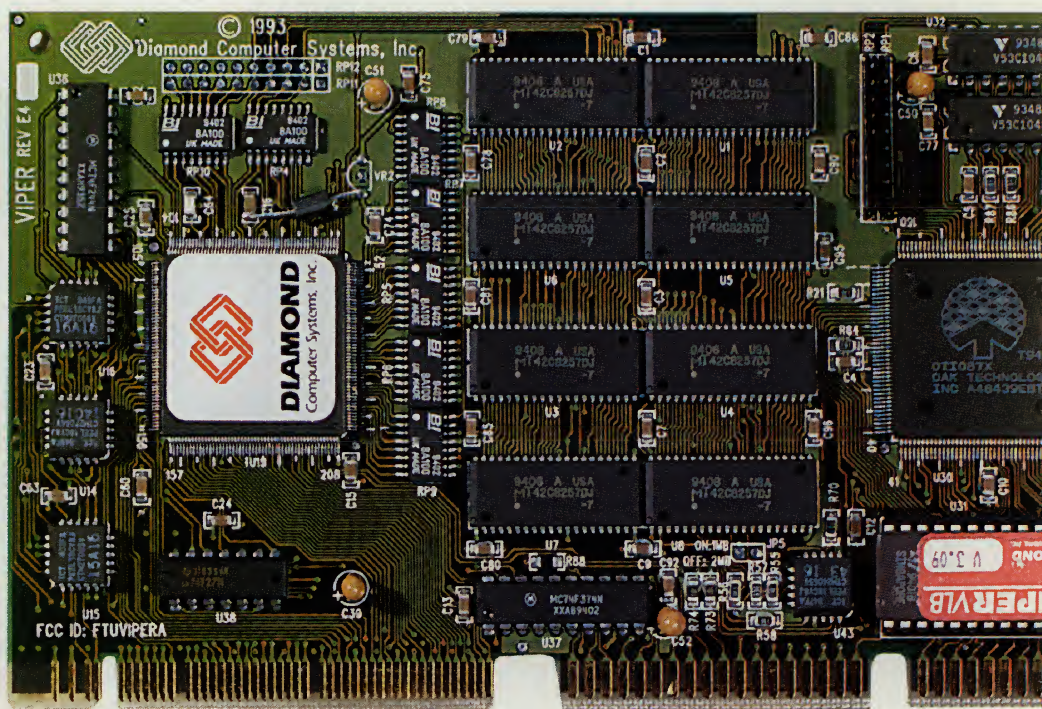
If you spend the majority of your time in Windows, then a graphics accelerator card, often called a Windows accelerator, is the way to go. These boards contain a processor that speeds up common Windows graphic functions such as drawing lines. Just how much faster depends on the kind of chip and bus the card uses, but you can expect performance increases of as much as ten

screens they rely on separate circuitry, which may be slower than your current VGA card.

## Don't Miss the Bus

Your new card must also be compatible with your PC's *bus*—the connector to the CPU. Most older PCs use an ISA bus, sometimes called an AT bus, but yours might well employ the less common EISA bus. IBM PS/2s and a few other systems use Big Blue's MCA bus.

Many newer PCs ride a local bus. Local-bus connections improve performance with a more direct link to the CPU. There are competing local-bus standards, including the older VESA local bus (VL-bus) and Intel's PCI. You must buy the appropriate type of local-bus card for your PC and have an empty local-bus



times compared to a non-accelerated Windows system.

That sounds great, but be warned: While these graphics powerhouses do wonders for Windows, they'll do little for DOS. In fact, some Windows accelerators will actually slow down DOS games and titles. That's because the accelerators affect only Windows image processing. To process DOS

slot available to put it in. To identify your system's bus, check the manuals.

## Resolutions to Live By

Once you know the basics, you're ready to select what level of *resolution*, or picture quality, you want. All current video cards support Video Graphics Array, or VGA, which is 640 horizontal



pixels by 480 vertical pixels. (Pixels are the phosphorescent dots that make up the image on your screen.) That's the minimum standard required to run today's games. Many games also support the next step up, SVGA, which can operate at a resolution of 800 by 600, 1,024 by 768, or even 1,280 by 1,024. (Of course your monitor must also support the resolution. Check your monitor's manual.)

You might be tempted to opt for the highest SVGA resolution possible, but that's not always a good idea. Higher resolutions display more information on the screen, but each element is smaller. That's great if you have a huge monitor, but you'll do a lot of squinting on a standard-issue 14-inch display. A good rule of thumb is not to exceed 800 by 600 on a 14-inch monitor and 1,024 by 768 on a 17-inch monitor.

## Color By Numbers

The next decision is how many colors you want at each resolution. Again, bigger isn't always better, since more colors can slow down your entire system. The minimum you'll want is 16

card memory. In general, the more memory on your new video card, the higher resolutions, more colors, and faster performance it offers.

All video-card memory isn't alike, however. Video boards use both VRAM or DRAM memory. Boards that use DRAM are generally cheaper—and slower—than those with VRAM. But either one is adequate for multimedia and games.

Whatever kind of memory you choose, demand a board with at least 1MB, or 512K if you're really strapped for cash. Many video boards now come standard with 2MB. If you're unsure about how many colors or what video resolution you'll need, look for cards that are expandable. That way you can add memory as your titles require it.

Video memory is especially critical for Mac owners. In fact, the best move to upgrade Macintosh video performance is usually to simply add more VRAM (up to the maximum, usually 1MB or 2MB) to your system instead of going for a more expensive video card upgrade.

## No Headaches

The final part of the video card equation concerns how often your computer redraws the screen. A faster *refresh rate* makes for a flicker-free screen. You may not be able to see the difference, but after a while you'll feel it—right between the eyes. Look for a card with a refresh rate of at least 72 Hz at every resolution you use.

Be careful. With most cards, as the resolution and number of colors gets higher, the refresh rate gets lower. Only more pricey cards maintain high numbers for both. Of course, to run your video board at a high refresh rate, your monitor must support that same rate at the same resolution. Once again, check your monitor's manual.

## In the Driver's Seat

Software is also a critical component of video performance. Software drivers let the video board communicate with your PC, and most boards come with drivers for DOS, Windows, and a few specific applications. Companies are constantly updating their drivers to provide better performance—or to fix bugs—so make sure that the board's manufacturer makes it easy to get updates. Many video card companies have their own bulletin boards or forums on online services.

## Video Card Shopping Checklist

Use this list when you shop. Make a copy for each card you're considering.

Product name:

Price:

Store:

Notes:

Type of card

☐ Frame  
buffer

☐ Windows  
accelerator

Type of bus

☐ ISA

☐ VL

☐ PCI

☐ MCA

☐ EISA

Resolutions, colors, and refresh rates:

\_\_\_\_ x \_\_\_\_ with \_\_\_\_ colors at \_\_\_\_ Hz  
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\_\_\_\_ x \_\_\_\_ with \_\_\_\_ colors at \_\_\_\_ Hz

Memory type

☐ DRAM

☐ VRAM

Memory size

☐ 1MB

☐ 2MB

☐ 4MB

Expandable

☐ Yes

☐ No

If yes, to how much?

DOS drivers

☐ Yes

☐ No

Windows drivers

☐ Yes

☐ No

BBS

☐ Yes

☐ No

Online forums

☐ Yes

☐ No

If yes, which ones?

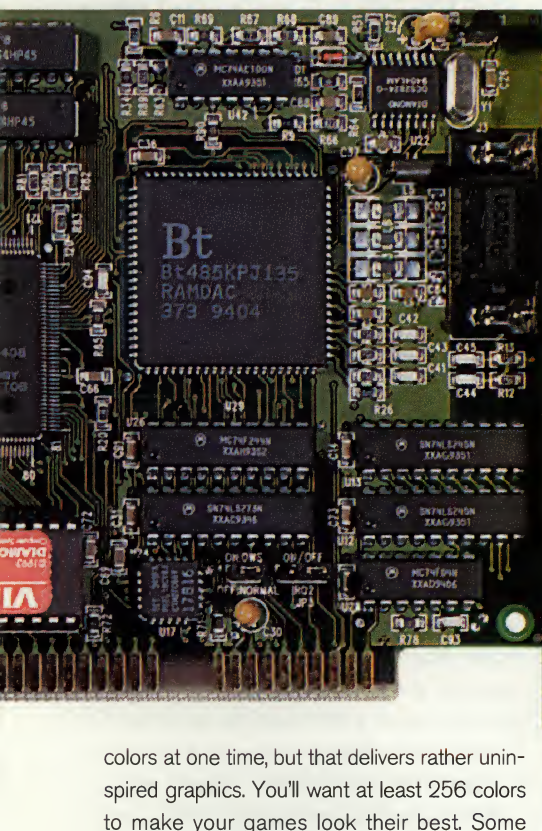
Bundled software utilities

☐ Yes

☐ No

If yes, which ones?:

Length of warranty:



colors at one time, but that delivers rather uninspired graphics. You'll want at least 256 colors to make your games look their best. Some titles, like Critical Path, prefer even more colors, so you may want a card that supports as many as 65,000 or even 16.7 million colors.

If you want to use lots of colors without compromising performance, you'll need lots of video-

Also look for Windows utilities that enable you to switch video resolutions, create virtual desktops, or give you panning and zooming capabilities. Finally, don't ignore a video card's warranty. Typical warranties last from a year or two on up to five years.

If all of this sounds like a lot to think about, you're right. But taking the time to make smart decisions now will pay off in the long run, since it's not likely you'll be upgrading your video again any time soon. Once you see the difference a new video card can make, you'll wonder why you waited so long.





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## Internet Wanna-be

*Even though I'm lucky enough to have an Internet account, it would be even better to have direct Internet access from my home PC. How does this work?*

Rotherick Tan  
Galesburg, Illinois

What kind of masochist are you? Do you have any idea how complex managing an Internet node can be? Do the terms "archie," "telnet," "ftp," and "uuencode" mean anything to you? Do you really *want* them to mean anything to you?

Much of the old software for managing and operating an Internet connection is Unix-only and requires more of your time to master than most normal people are willing to commit to anything besides sleeping and watching TV. And a lot of the software available that gives you access to Internet information only runs on Unix machines, too. So you'd best be considering a full-bore Unix system, like something from Sun Microsystems or Hewlett-Packard—and they ain't cheap.

There are low-rent alternatives, like CompuServe, that let you send and receive e-mail to the Internet. Other services like Delphi additionally let you use some features like the Internet's Usenet news service. But most of the Internet's vast resources are locked safely behind a wall of garbled Unix commands.

Fortunately, that's changing.

Several companies, such as MKS, Spry, and the Pipeline, have easy-to-use interfaces for their Internet gateways that provide nearly full Internet access. For example, the Pipeline gives users a Windows interface to news, weather, mail, and file searches that eliminates the need to know cryptic Unix terms.

Right now only users in major metropolitan areas, such as New York and San Francisco, can access these services with a local phone call. But in the next few months, expect to see a flood of companies offering such services. In the meantime take a look at "Easy Cruising on the Internet" on page 15 for more information on getting hooked to the Internet.

## Is 16 Twice as Nice?

*I'm planning to upgrade to a 16-bit sound card, but I don't know what I should buy. I've heard about these new sound boards that use wavetable synthesis instead of the traditional FM synthesis. Should I be concerned about this, or should I only worry about getting a Sound Blaster-compatible board?*

Steven Seto  
Internet

The first thing you should look for in a 16-bit sound card is Sound Blaster compatibility. If a game is only going to support one sound card standard, it's a safe bet it will be the Sound Blaster. Keep in mind that many sound cards, and most games, are compatible only with the older 8-bit Sound Blaster standard. So buying a 16-bit card won't gain you much unless you get games that

## Graphic Action

*I'm an experienced video-game junkie, but I'm just now getting into PC games. I have a good 486/33 system but can't decide if I should go the extra mile and get a CD-ROM drive yet. I don't want to spend the cash if I don't have to!*

My big concern is that after playing fast-moving video games with high-quality graphics, I'll be disappointed with the hard-drive-generated graphics of PC games. Is this going to happen? How will CD-ROM games affect the situation?

Bill Nogosky  
Spartanburg, South Carolina

While a CD-ROM drive can hold more video and graphics than other media, it isn't a matter of life and death for computer games.

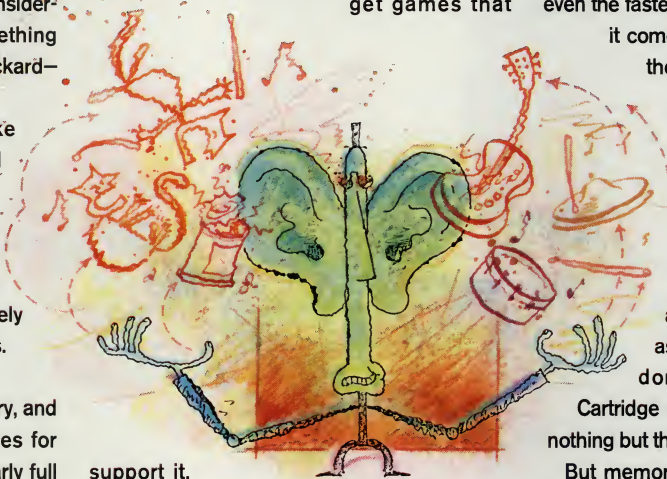
CD-ROMs may hold bits by the bushel, but even the fastest CD-ROM drives are dogs when it comes to sending that information to

the system. Hard drives are faster, so some CD-ROM games store big graphics files there to help improve performance. But neither type of disk is as quick as a computer's main memory or the memory used in cartridge and arcade games. Really fast action games store as much code as possible in this ultra-quick "random-access memory," or RAM.

Cartridge and arcade games generally use nothing but this speedy memory.

But memory speed isn't the only thing that will affect the action. Cartridge and arcade systems also use special graphics circuits designed to do nothing but make games look and play great. A PC has to be a jack of all trades, from playing games to balancing spreadsheets, so it doesn't display whizzy graphics as well as a dedicated gaming system.

PCs—not to mention CD-ROM drives—are getting faster and better all the time, though. Just don't expect the same sort of performance you see when you're playing NBA Jam at the arcade.



support it.

If they don't, you're not really upgrading since you'll be playing in 8-bit mode, even though the card is 16-bit.

If you can afford it, go with wavetable synthesis. The FM synthesizer found on most sound cards is a sin against God, man, and rock 'n' roll. Cards that support General MIDI, when combined with compatible software, will make you wonder why you ever put up with FM synthesis in the first place. Drums will sound like drums, not tin cans, and electric guitars will no longer screech like mating cats.



## Monitor Mission

*Okay, I've got a couple hundred dollars to spend on a monitor for my PC, but I have no idea what to buy in that price range. Some people have told me to get a 14-inch Super VGA monitor, and others have said I should just go with a larger VGA monitor. Which should I buy?*

Chris Watson  
Internet

I've got to tell you, a couple hundred bucks isn't going to buy much of a monitor. My best advice would be to save your money until you can afford a good-quality 15- or 17-inch Super VGA monitor and a suitable Super VGA graphics card. But if you have to get something now, let's see what we can do.

First of all, do you have a VGA or a Super VGA video card in your system? If it's just VGA, buying a Super VGA monitor won't do you much good since you'll have to run it at VGA resolution anyway. You're better off with a larger VGA monitor—maybe you can find a used one that's bigger than your current model.

If you do have a Super VGA video card (or plan on buying one), then you should get the best Super VGA monitor you can afford, even if it's only a standard 14-inch model. (For more about video cards, see "Graphically Speaking" on page 114).

Don't expect too much for less than \$300 to \$400, though, as the better Super VGA monitors will run you \$500 or more. Beware of "bargains," too. Many inexpensive Super VGA monitors will indeed be noninterlaced and support high-resolutions, but the image may be so fuzzy that you won't want to spend much time looking at it. And what's the use of a monitor if you can't stand to stare at it?

## (In)compatible

*I'm a novice when it comes to installing software, but I find it very frustrating when I purchase a new game and it won't easily install on my PC. When I try to install it I often get error messages or compatibility warnings. My first thought is always that I don't have enough memory, but that's not it. Then I worry about an IRQ conflict, but if that were the problem, why do other pro-*

*grams work well with my Sound Blaster and CD-ROM drive?*

Phil Johnson  
Kent, Washington

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And just to make life interesting, even if you win all these games, you may still lose. That's because game makers are constantly pushing the outer limits of what computers can do, and hardware makers aren't always as careful in designing their machines as they could be. So some small, hidden incompatibility in your sys-

tem or the software may prevent the game from ever running properly!

So get out that manual, call the tech support number, and get ready to play!



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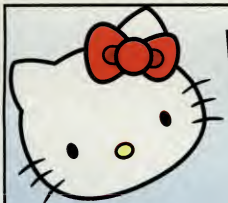
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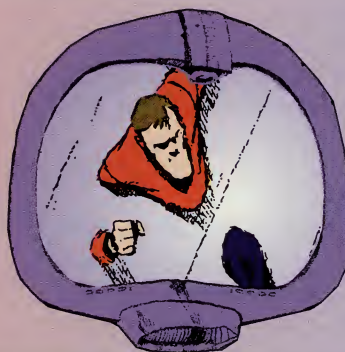


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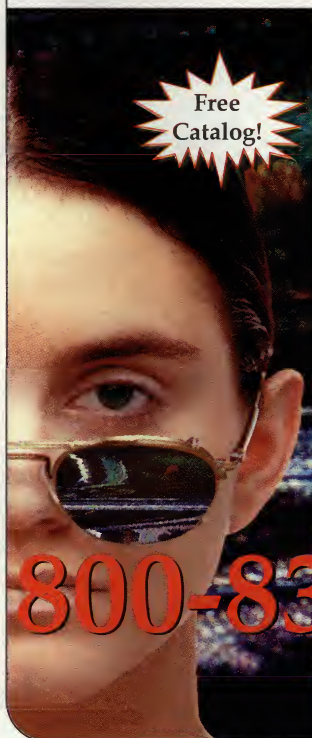
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## Shocks, Smells, and Jumps

I still remember the first time I put my hand on a trackball. And I remember the first time I touched a mouse, a light pen, a joystick, a keyboard, and a touch screen. At the time, each of these now commonplace controllers seemed revolutionary.

Lately, I've been thinking about some of the strange and bizarre computer game controllers I've encountered over the last couple of decades. I remember back in the early days of Pong when an inventor came to Atari with a unique new device that measured galvanic skin response. You strapped a sensor to some part of your body, and it let you control the cursor based on the way you flexed that particular muscle.

I can remember playing a game of Pong using my right eyebrow to control the paddle while my opponent controlled his paddle using his right calf. I'd raise and lower my eyebrow, he would flex and unflex his calf, and with a little practice we started having some pretty decent games. And it was fun! You could sit there like a zombie and do very well with just a twitch of an eyebrow, a leg muscle, or whatever. I always wondered why this type of thing never took off.

After all, that was one of the less controversial approaches. More shocking was the idea we had for Tank. You remember Tank, don't you? The version you saw back in the arcades had two joysticks—you'd push one forward and one back to turn on your axis, just one forward to make a curving turn, and push both forward to go straight ahead. It was no big deal.

But back in our laboratories we had a version of the dual-joystick interface that had

electrodes wired into the handles. The idea was, you'd feel a shock whenever your tank got hit by a shell.

It's not that we wanted to hurt people; we just wanted to change the way they played the game. Think about it: If there's no real risk, you take more chances to win. But if you get shocked when you get hit, you start playing differently—smarter, for one thing. I always thought this would be an interesting way for people to wager in bars. Instead of winning money, you'd cause the other person pain.

Of course, we added a dial that let you control the intensity of the shock you got. Be we found out that we might as well have installed an on-off switch instead of a dial. The macho guys simply said, "Crank it up, buddy. I can take it if you can."

Well, my wife thinks this is the sickest idea she's ever heard. But in retrospect, I think there are a lot of guys out there who would get into this.

If you think the shock machine stinks, consider a game we developed called Smell-o-vision. Based on a weird old motorcycle film that was done long before video games, it had a set of atomizers that gave off different scents depending on where you were riding your bike. If you motored past a coffee shop, you'd smell coffee and apple pie, or manure if you zipped by a farm.

Unfortunately, Smell-o-vision turned out to be what we called in the coin-operated video game business a "oneser." People put in one quarter, then they never want to play

again. No matter how cool they are, onesers don't make much money, so they end up relegated to the curiosity corners of museums and old amusement park arcades.

But perhaps my favorite funky interface was an active floor unit, which you played with your feet. In fact, we actually created a product that combined a video game with this playing floor. The game had nine sensors laid out all over the floor in a giant ticktacktoe board. Above your head a screen showed another ticktacktoe board.

The goal of the game was to step on spiders and other vermin before they made it across the board. The screen above showed the critters, and you had to

stamp on the right floor sensor. The game was so much fun, you wouldn't realize how much work it was. In a minute and a half, the players were panting and sweating like you wouldn't believe. And they loved it.

Unfortunately, it was a total failure in singles' bars. No one wanted that kind

of a workout before sidling up to the object of their affection. But I don't know. Maybe the twin trends toward sports bars and grunge will revive it. After all, if you're already disheveled, who cares about a little sweat?

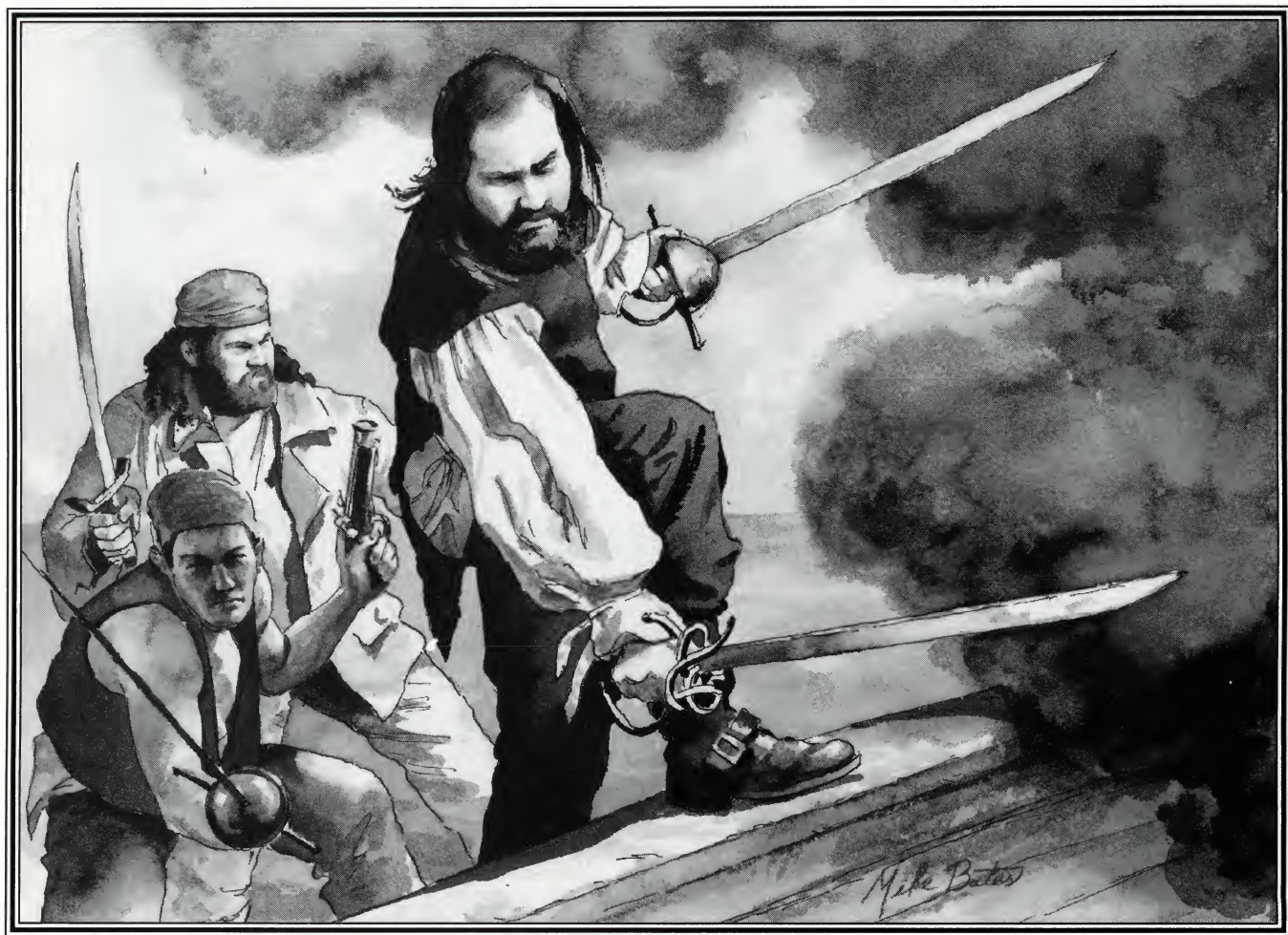
*Nolan K. Bushnell invented Pong, founded Atari, and created Chuck E. Cheese. He is currently chairman of Octus, the maker of PTA software, in San Diego, California.*



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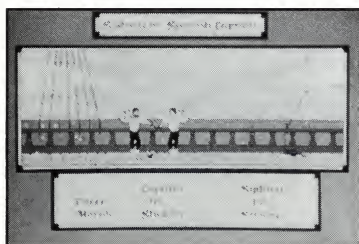


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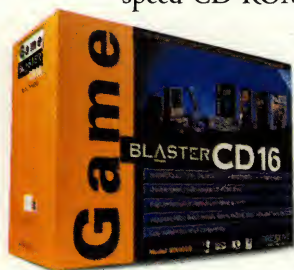




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